

MARVEL

THE ART OF

IRON MAN 2









Trailer image



Rick O'Connor, John Walker, Christian Foucher.



MARVEL

THE ART OF

IRON MAN[®] 2

Written by **JOHN BARBER**

Book design by **MAZ**

Foreword by **JON FAVREAU**

Slipcase & back cover art by **ADI GRANOV**

Front cover art by **RYAN MEINERDING**

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Poster art



Poster art



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Production still

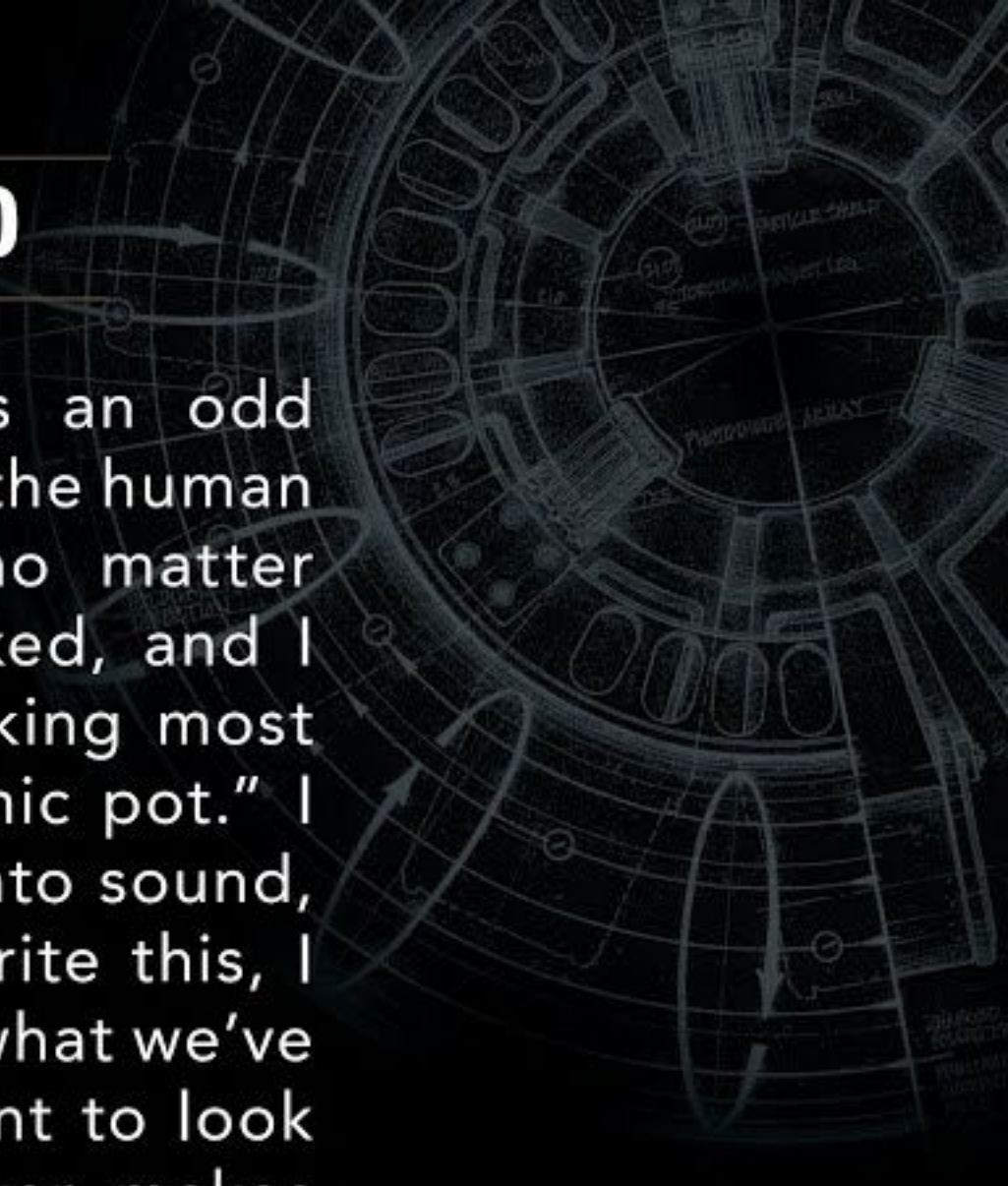


FOREWORD

Flipping through these pages is an odd experience. It is amazing how quick the human mind is to forget the journey, no matter how arduous. Picture has just locked, and I am currently in a phase of filmmaking most easily equated to “firing the ceramic pot.” I am putting the finishing touches onto sound, picture, and digital effects. As I write this, I have no idea if we’ve succeeded in what we’ve set out to do. Taking a rare moment to look back on how far we’ve come, however, makes me quite proud of our effort and sincerity.

These images reveal a journey taken by countless talented and hardworking artists and craftsmen. Their work as individuals is, by its very nature, invisible. Like in a Japanese rock garden, the artist’s final job is to rake away their footprints and create the illusion that the garden was untouched by human hands. Film, however, is extremely human. Make no mistake, no matter how many computers are used, each frame is truly handmade. This book serves to give a glimpse of all the fingerprints that have been buffed away in the interest of creating an illusion. I dedicate this book to those who have contributed and sacrificed to tell a story and entertain. It is a noble endeavor.

—JON FAVREAU



CHAPTER ONE:

HALL OF ARMOR

"I am Iron Man." With those words at the close of the first Iron Man film, the cinematic super hero changed forever. The movie had already revolutionized the genre, both conceptually—a flawed, adult hero coming to a harsh realization about the life he was leading—tonally—a heady mix of humor, pathos, and real-world politics—and technically—a seamless mix of the physical and the digital.

But the move to have Tony Stark, as brilliantly portrayed by Robert Downey Jr., reveal his "secret identity" to the world—with characteristic bravado—created yet another revolution. Not only was this unprecedented for a super hero movie, and not only did it bring the film even more strongly in line with the comic book series upon which it was based...but for Tony, it made him the world's most visible target.

"It's about six months later that we pick up with Tony Stark, at the start of Iron Man 2," explains producer Kevin Feige. "He's been Iron Man for six months. He's gone on adventures around the world, he's intervened in all sorts of political crises, and he's made

quite a name for himself. If he was the most famous man in America in the first movie, he's the most famous man in the world in this movie."

That kind of fame mirrors the real-world phenomenon of the Iron Man franchise. "It's hard to believe now, but two years ago not everybody knew Iron Man," says Feige. "The success of Iron Man, globally, was well over \$500 million. It was a phenomenon of the year, and for us at Marvel—everybody knows Iron Man now."

And with that knowledge comes high expectations. The cast and crew of Iron Man 2 were up for the challenge. Returning figures both behind and in front of the camera welcomed the new faces, and production began mere months after the first film premiered. Jon Favreau was back in the director's chair, with his trusted team of conceptual artists and visual effects experts going to work. "Part of the difficulty of these super hero movies is that everything has been done," Favreau realized. "So how do you make it different, not only from our first film, but from what everybody else is doing?"





IRON MAN MARK IV ARMOR



Iron Man made his debut in the *Tales of Suspense* #39, cover-dated April 1963. The story was written by Larry Lieber and drawn by Don Heck. "The thing that made all those formative, early Marvel characters durable over time was that they were a lot more relatable than your average square-jawed super hero had been, up to that point," says Marvel Comics Executive Editor and Vice President Tom Brevoort. Iron Man was different—"He was the sick super hero. His heart was always on the verge of giving out."

That quality was not lost on Stan Lee: "It seems to me, the one thing about Tony Stark that is so great—he is so glamorous, and he is so successful, and he is so virile and such a man, and yet he is very vulnerable. Despite all of that, he has a vulnerability." That vulnerability came to the screen in the first *Iron Man*, wherein the Repulsor Tech (RT) device in his chest was the only thing keeping him alive.

Over the years in the comics, Iron Man has grappled with alcoholism, fought technology he himself has created, and come to blows against other heroes

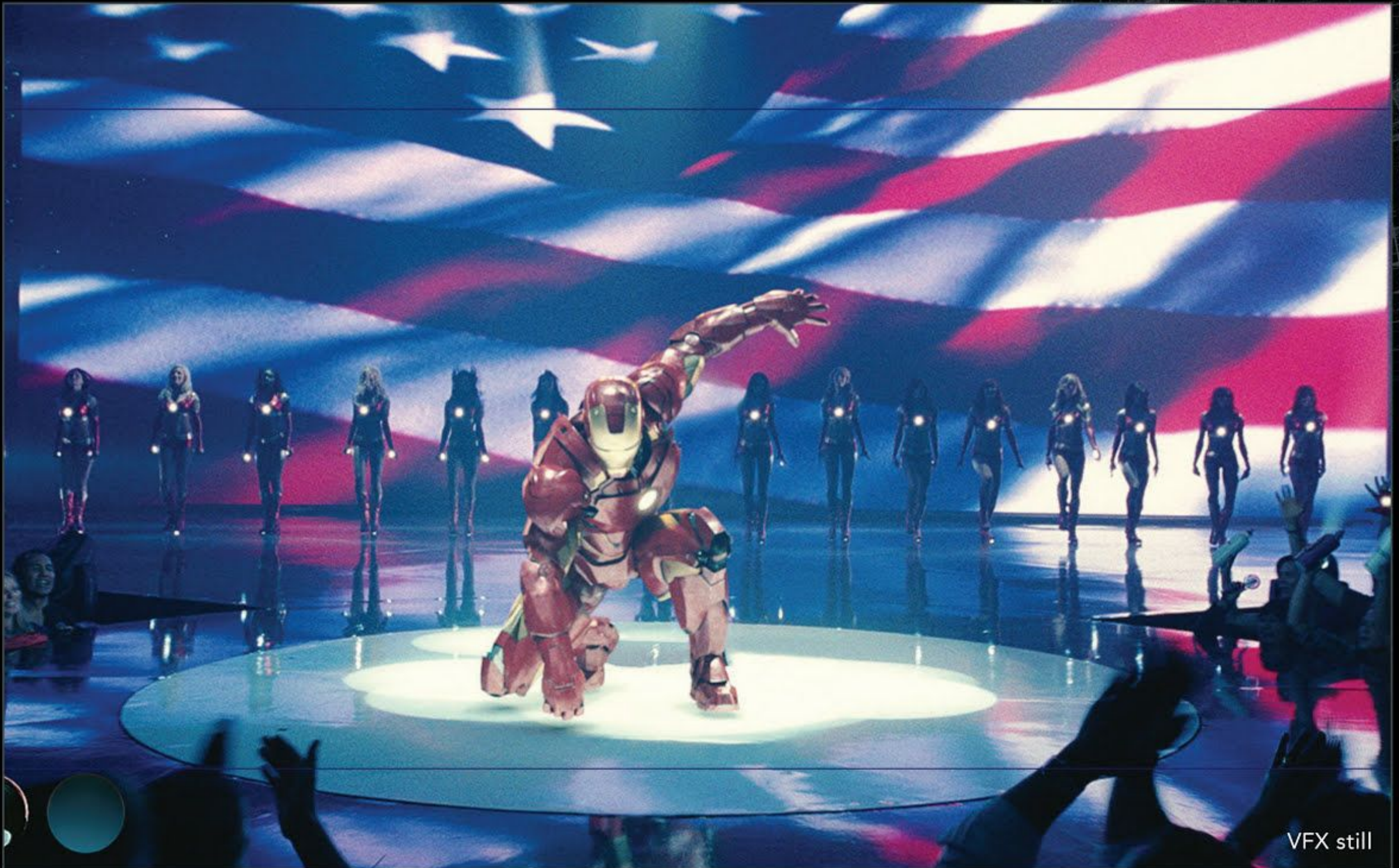


over ideological issues. All of this would prove to be ripe material for *Iron Man 2*. "As we were digging through that material," says Co-Producer Jeremy Latcham, "it became apparent that there was a hero there that was kind of unlike all the others. You know, he was a man, he had a point of view, he was an adult, he had real problems."

"Iron Man went through some tough times when the tenor of the times turned against him," Brevoort agrees. When the peace movement gained traction in the late 1960s and early 1970s, "guys like Tony Stark, who were making weapons for the government while there's a war going on that most of the readership of *Iron Man* was being sent over to fight, these guys were like war profiteers. And Tony had to go through these consciousness-raising back-flips."



That's where we find our hero at the start of *Iron Man 2*: no longer making weapons and bringing his own brand of privatized peace to the world in the new Mark IV armor. "It's always fun when your hero is the hero from the start," says Producer Kevin Feige. "From frame one of *Iron Man 2*, he is in the suit. That allows you to just hit the ground running in terms of the story that we're telling."



VFX still

Shane Mahan—Legacy Effects: “The whole suit at first glance looks like the original suit, but when you really put it under the microscope, its every plane and line is different. And that’s been actually a really enjoyable process with [Conceptual Illustrator]

Ryan [Meinerding]. Ryan’s one of the best and most cooperative and generous designers that we’ve ever worked with in terms of the back-and-forth. He’s a really tremendous, talented guy.”

THE ART OF IRON MAN 2

Kevin Feige—Producer: “[Ryan Meinerding] slightly adapted the Mark III from the end of the first film. If you look at it, you compare it side by side, it’s sleeker, it fits better, it’s more dynamic and it’s got more gadgets. But it is iconically and unquestionably Iron Man.”

Ryan Meinerding—Conceptual Illustrator: “It has been difficult because the Mark III was such a successful design and everyone embraced it so much. It’s difficult because the mandate was to change it in enough ways that you could tell it was different, but not make it look radically different. So we tried to land on a balance where it’s at least subtly tweaked and maybe some things are designed to be a little bit sleeker...”



Jonathan Bach



Ryan Meinerding



**Mark IV with circular RT 1**

NOTES: 3d model paintover
 DATE: 01.07.09
 ARTIST(S): PLF, R. MEINERDING

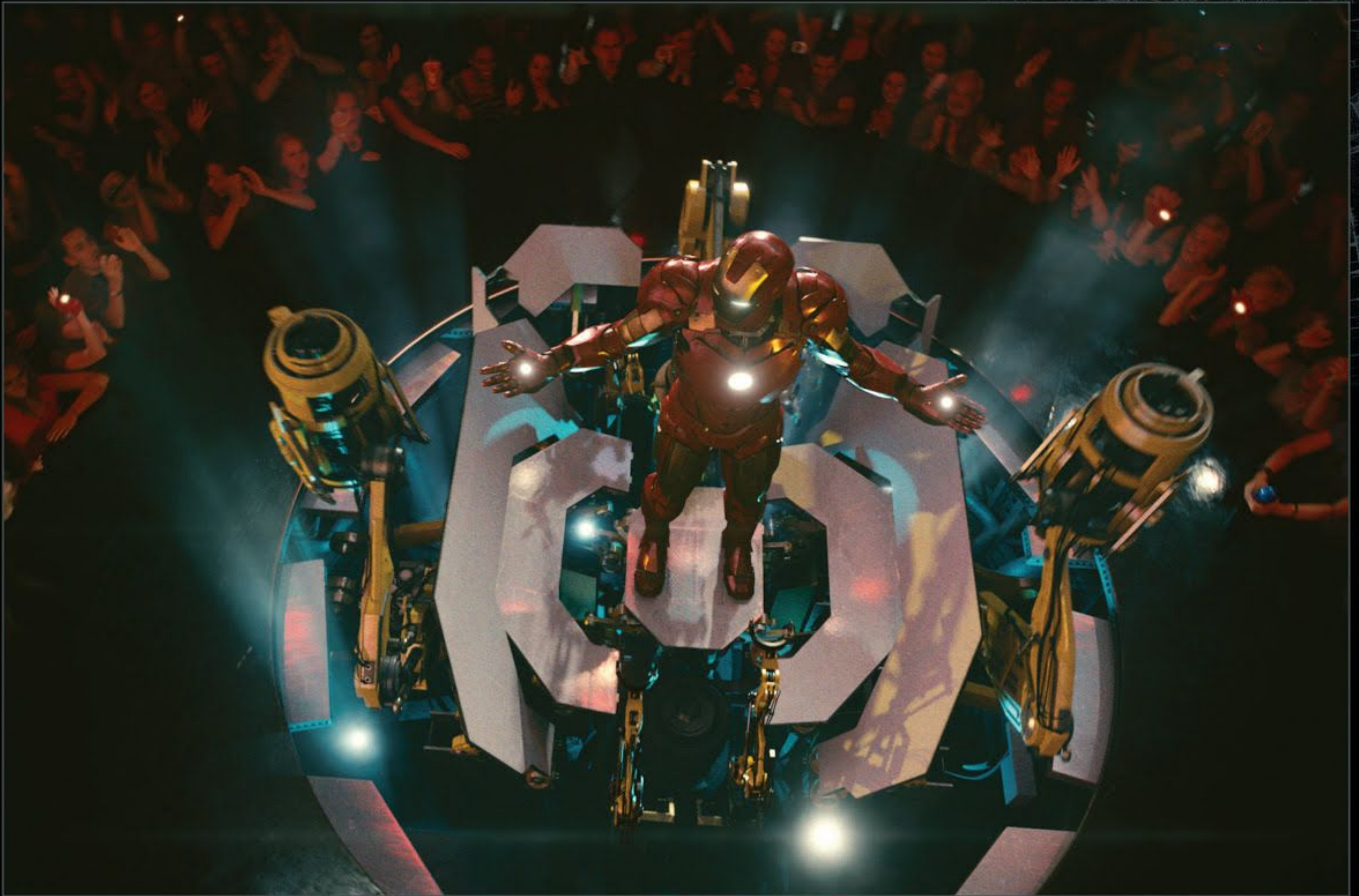


Meinerding: "The main thing is mostly aesthetic. The layman would look at it and probably couldn't tell the difference. We changed the shoulders and we changed the legs, and the arms are different, too—but the main difference is in the legs. I really wanted to add, from a front-view, a more human gesture to the legs. What they did in the Mark III is really great because the legs are very linear, and you get the feeling like they're there for thrust, and it's about flying. But I felt like in some of the action sequences, it probably would help a little bit to have a little more gesture and therefore sort of make the poses a little bit more dynamic. The big shoulder pads in the first movie were one of the things we were going to try to slim down a little bit, to make it feel more high-tech as opposed to football pad-ish."



Mahan: "It's been a slightly different experience, because the first film there was such an experimental phase of trying to figure out how to do that suit. And also at that time, we were under the helm of Stan Winston, so a lot obviously has changed for the second film. Since Stan has passed away, we're in a different

facility, but the same team, the same drive, the same energy is going on. And because we've done it the first time, even though we may have a shorter window to build, it's kind of like that huge experimental phase is kind of taken out of the mix."



Mahan: "This time around, the stipulation from the director and from Robert [Downey Jr.] is to make the suits quick to get on and off, and light. You know, take what we've learned, modify it, make it better. We work hand-in-hand with [Production Designer]

Michael Riva and Ryan Meinerding and the other designers. It's really like Jon [Favreau] works for months with his camp on looks, then we kind of work with them on fusing them together. There's a shorthand now, because we all know each other."

IRON MAN MARK II ARMOR



"The suit itself is a living, evolving, piece of technology. I think, at last count, he was on his twenty-seventh or twenty-ninth version in the comic books, of the Iron Man suit," says Kevin Feige. Iron Man has been tinkering, and updating, his armor for decades now, but one of the oddest innovations—at least to those who aren't familiar with the comic—may be the so-called "Suitcase Suit."

"The suitcase, as a carrying device, went right back to the beginning," says Tom Brevoort. When Tony Stark built the original Iron Man armor, he escaped from his evil captors and walked off into the sunset. But by the next issue, he was back in America and carrying the armor (other than the chest plate that kept his heart beating) in a small suitcase. "In the world of 1964," Brevoort elaborates, "every businessman had their briefcase, but what if that briefcase had this superpowered thing inside of it?" This added to the wish-fulfillment aspect of the hero.

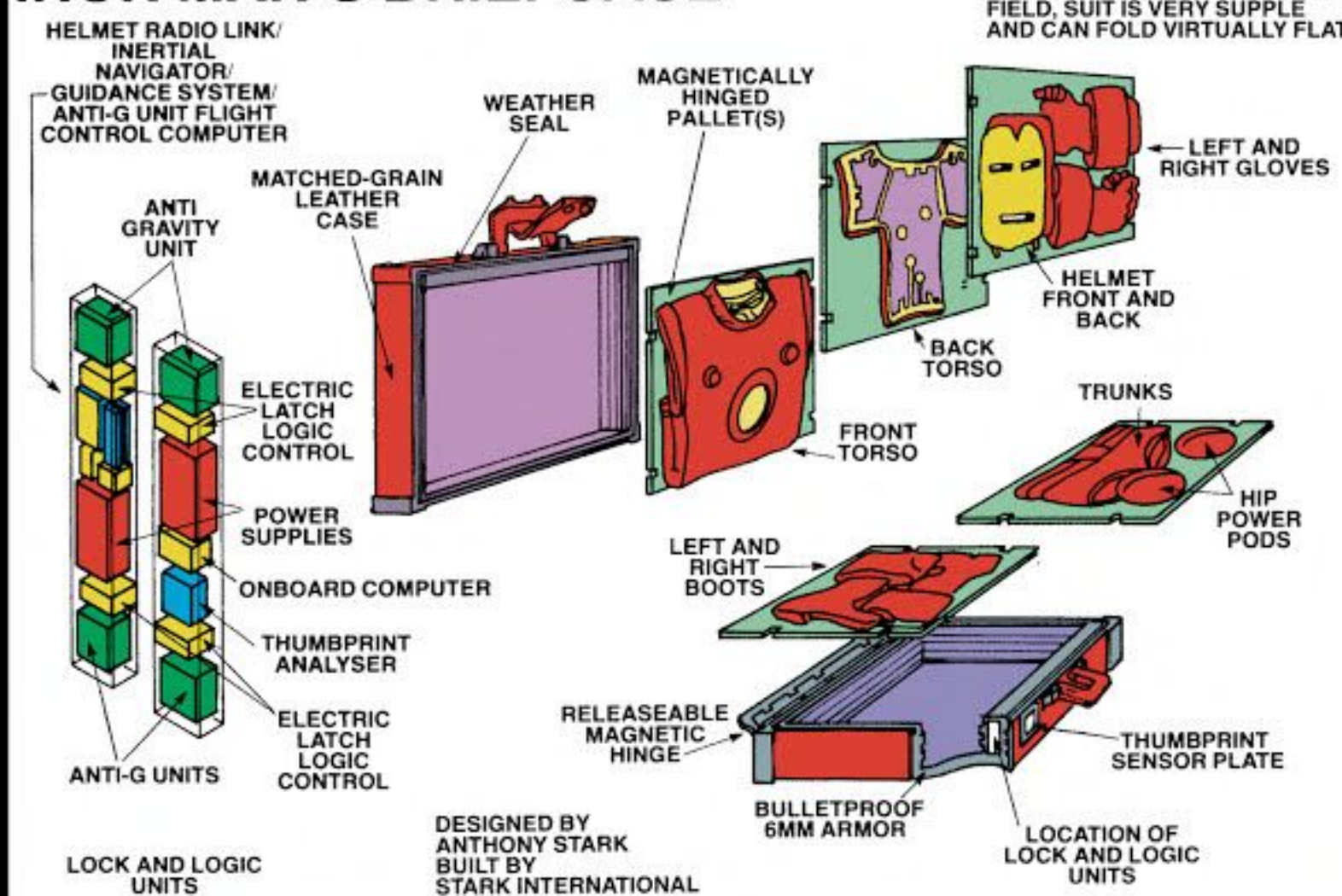
It also allowed him to be mobile, and that was a key concern for the filmmakers when it came to Iron Man 2. "One of the things that makes Iron Man interesting, but also difficult, is the fact that you have this really elaborate suit-up sequence," explains Ryan Meinerding.

"So, realistically, the only place he can become Iron Man is back at the garage. The suitcase suit was sort of born out of the concept of wanting to make sure that if he's around the world, he can still be Iron Man and not have to travel back to Malibu and jump in the Iron Man suit."

"We were talking about the suitcase suit in the first one," says Jon Favreau, "but it felt like such a technological leap, because you didn't really buy it—like, in the comic books, it was somewhat silly. But there's something cool about taking something that's silly and finding a way to justify it and make it actually work, so that you can sort of have your cake and eat it, too."

"The real trick is, how do you make something that's ridiculous in the comic book actually plausible in our film, and how far can we stretch it before we break the tone?"

IRON MAN'S BRIEFCASE



This image of Iron Man's briefcase, which he used to carry his armor, originally appeared in The Official Handbook of the Marvel Universe #15 (1984).



Jon Favreau—Director: "This suit's not as strong, not as versatile—but it's good in a pinch. He carries it around much like the president carries around the 'football'—the suitcase with the buttons to set off the nuclear deterrent. We wanted it to look like it could actually deploy from a suitcase, and you'd have certain volume issues so you don't want to get too big, you don't want too many pieces. It's finding that correct balance where it makes sense, and then the suitcase can't be too big, because it should feel more like an attaché case, like in the comics."

Meinerding: "The realities of trying to actually have a suit come out of a suitcase have been somewhat challenging. We did a little bit of math, and the surface area that covers a body could actually fit into a case that's not much bigger than a briefcase, so we can shove a little bit more mechanical bits in there and hopefully we can make it real."





Meinerding: "The RT and the faceplate and the helmet are probably the easiest [elements that distinguish Iron Man]. The other things which I've found are very important, are to make it look like he has shoulder pads on—even if they're slim—make sure it looks like he has gloves on, and make sure it looks like he has boots on. For some reason, to bump those out in the silhouette just a little bit more makes it a lot closer to Iron Man."

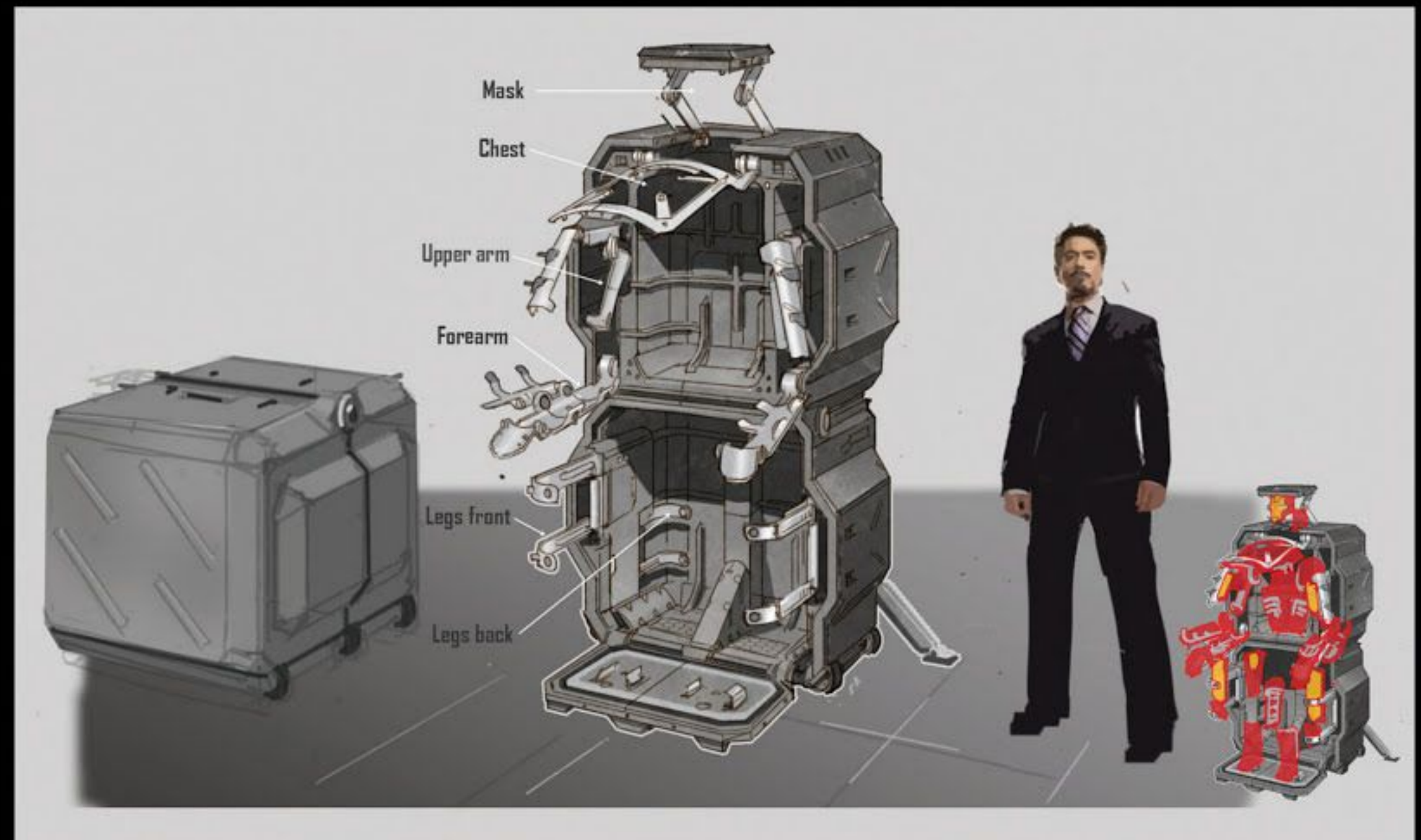






Favreau: "It was like hundreds of hours of meetings, figuring out what color it is, and then does it shuck off a husk to reveal what it is, or do we try to maintain the volume...how does it deploy...and how heavy is it? And how is it transported? How does he get his hands on it? How does he open it? How long does it take to snap on? And how do we show it go on? What's the material it is made from? And all of this stuff."

"None of these are answers that are intuitive—it's all decisions, all those dozens and hundreds of decisions you have to make as a director; that's my job. That's what I do for a living. And I like it, you know, but it is a lot of hand-wringing. Fortunately I'm surrounded by people who could present you choices... and people who are smart."





Feige: "It needs to feel like a briefcase, not a huge piece of luggage. Can you successfully make it feel like a full head-to-toe suit has deployed out of mass that big? And that was the biggest success of that piece—the way it unfolds, you buy it."

1) Open & Drop Case



2) Jump into boot bottoms & insert hands into gloves to trigger activation



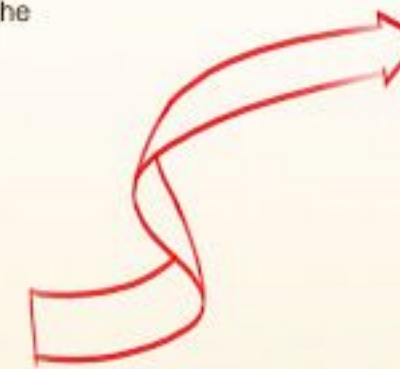
3) Stand & fully extend arms into a stretch, arch back

-Suit deploys in a wave away from the extremities in concert with this motion



4) Raise faceplate into position

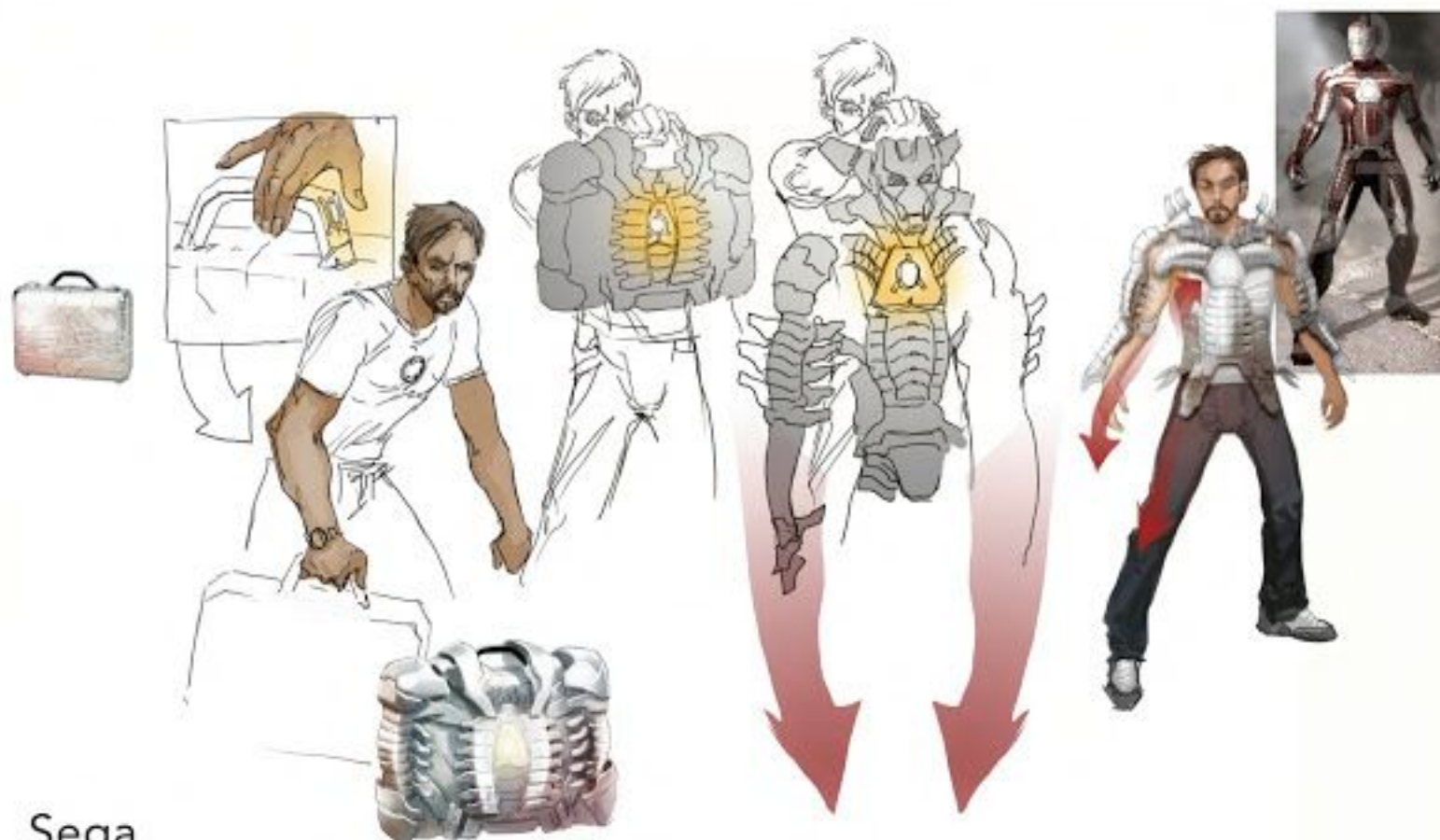
-Faceplate will then clasp shut as the rest of the suit does



Super-heated suit glows momentarily before the ultra thin titanium nickel panels cool off



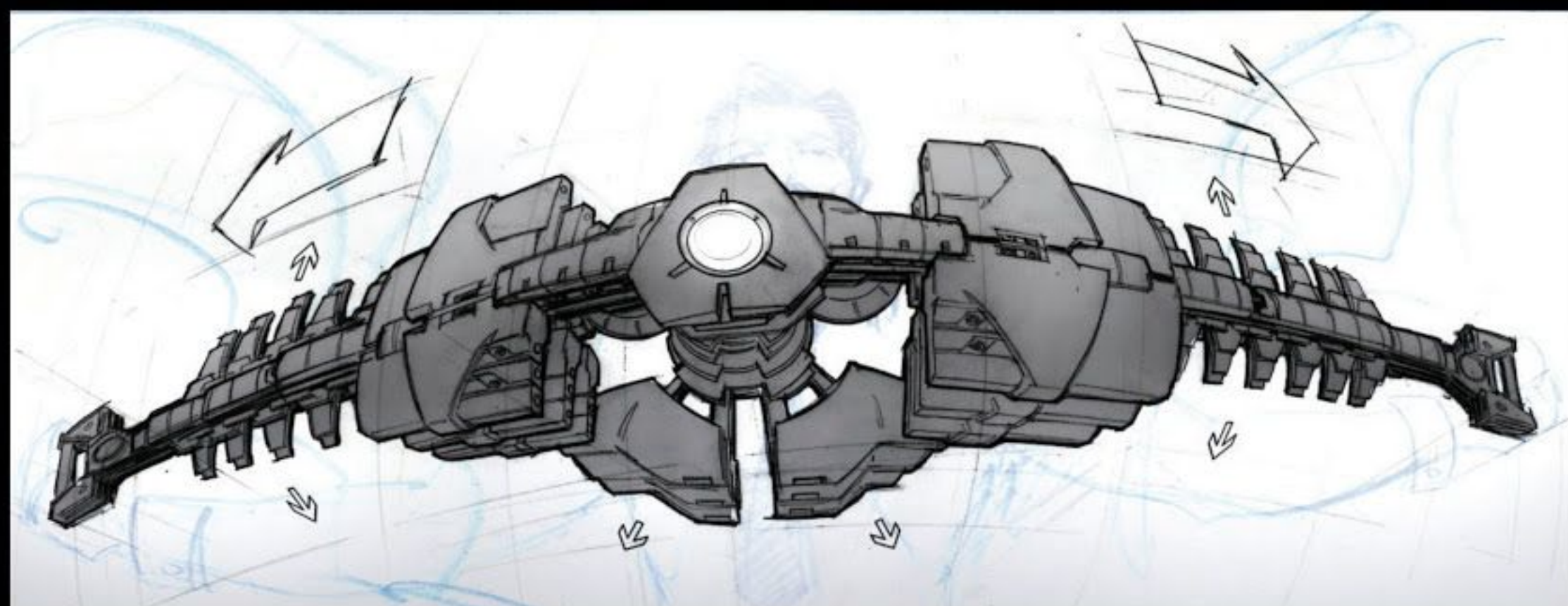
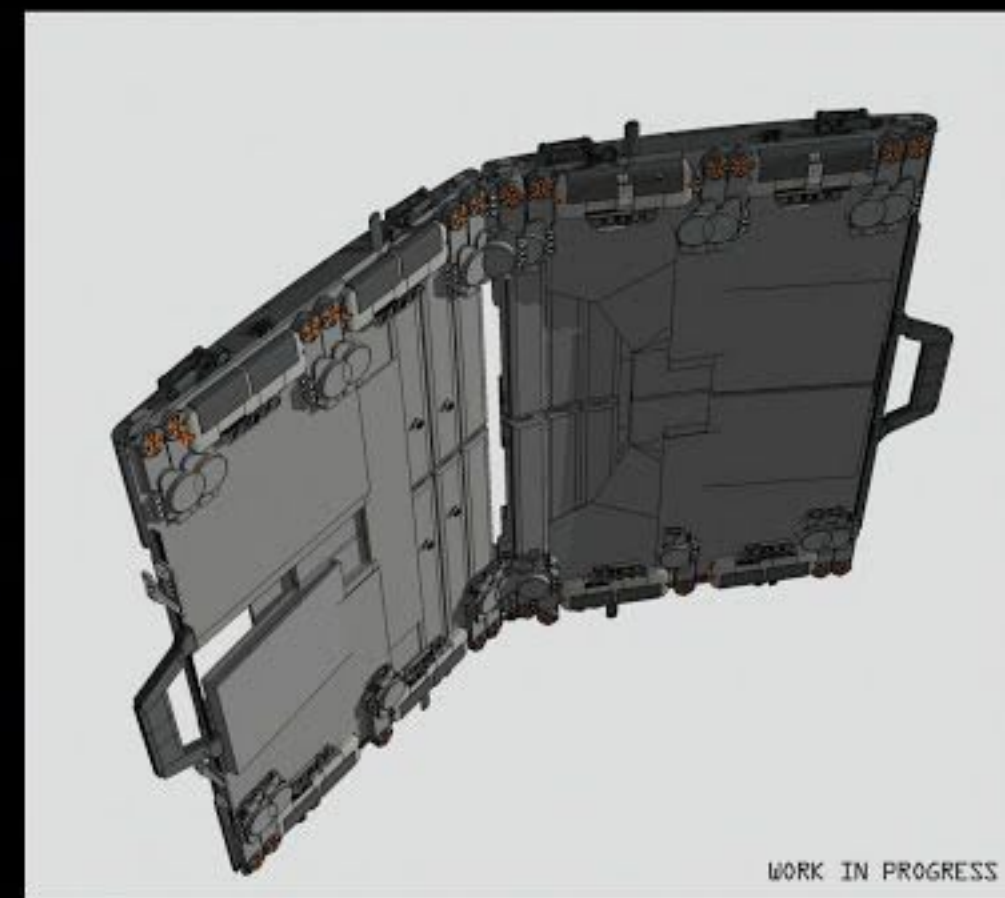
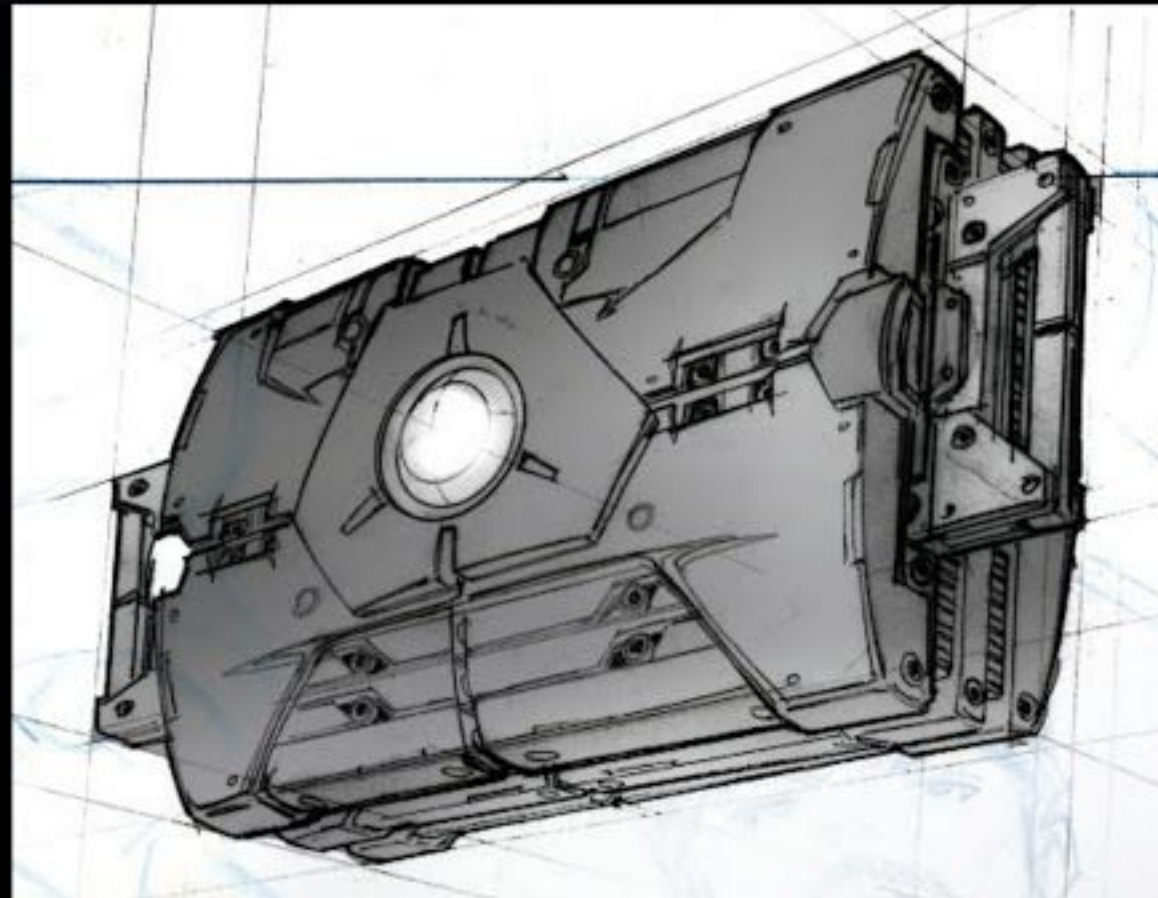
Jonathan Bach



Sega

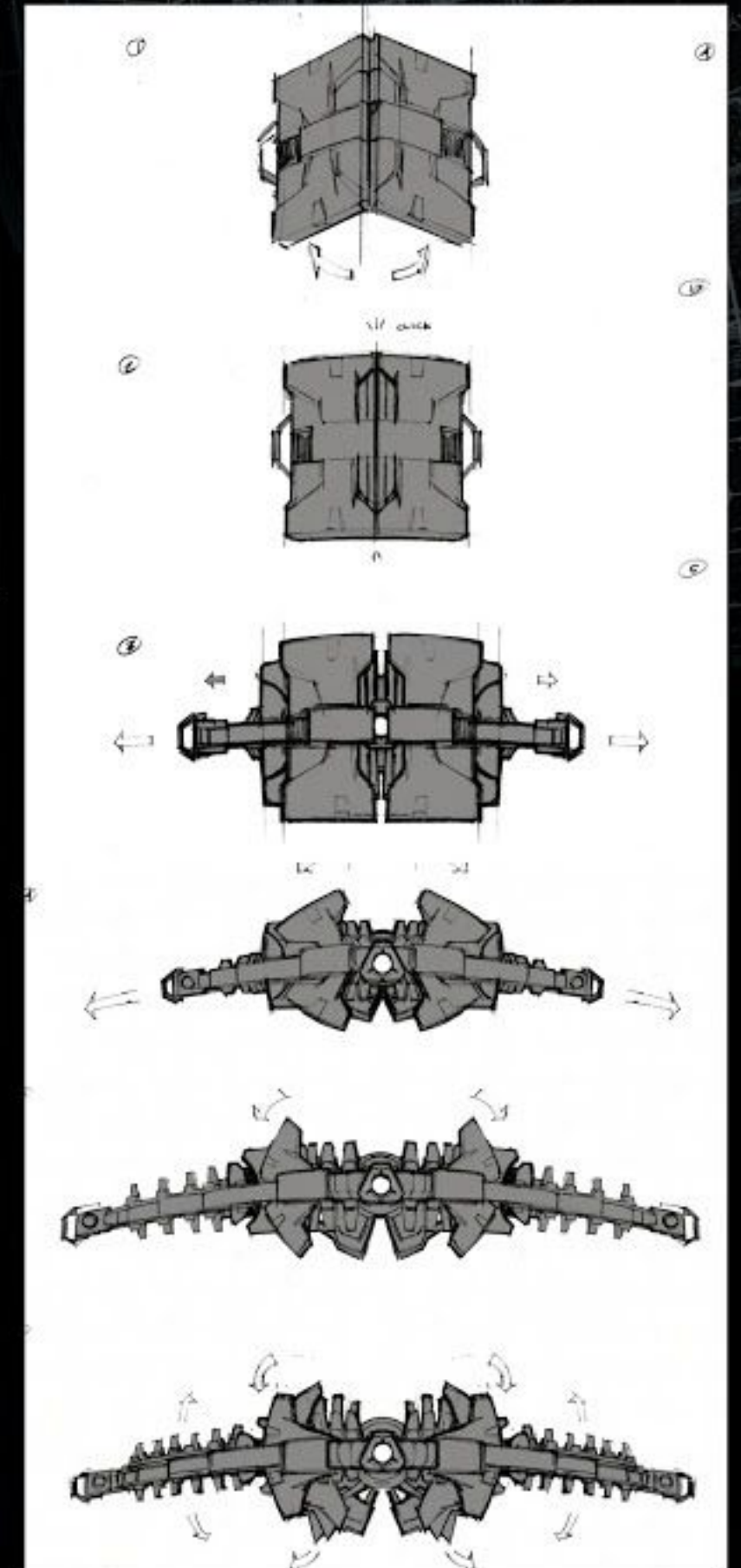
Meinerding: "The suitcase was one of the first things I started working on, and we got it to a place where Jon [Favreau] was like, okay that's reasonable, let's try and get the visual effects vendor on board to take it to the next level with how it's actually going to come out of the suitcase. So that was probably about a month, two months with different variations, and these are some of the other variations."

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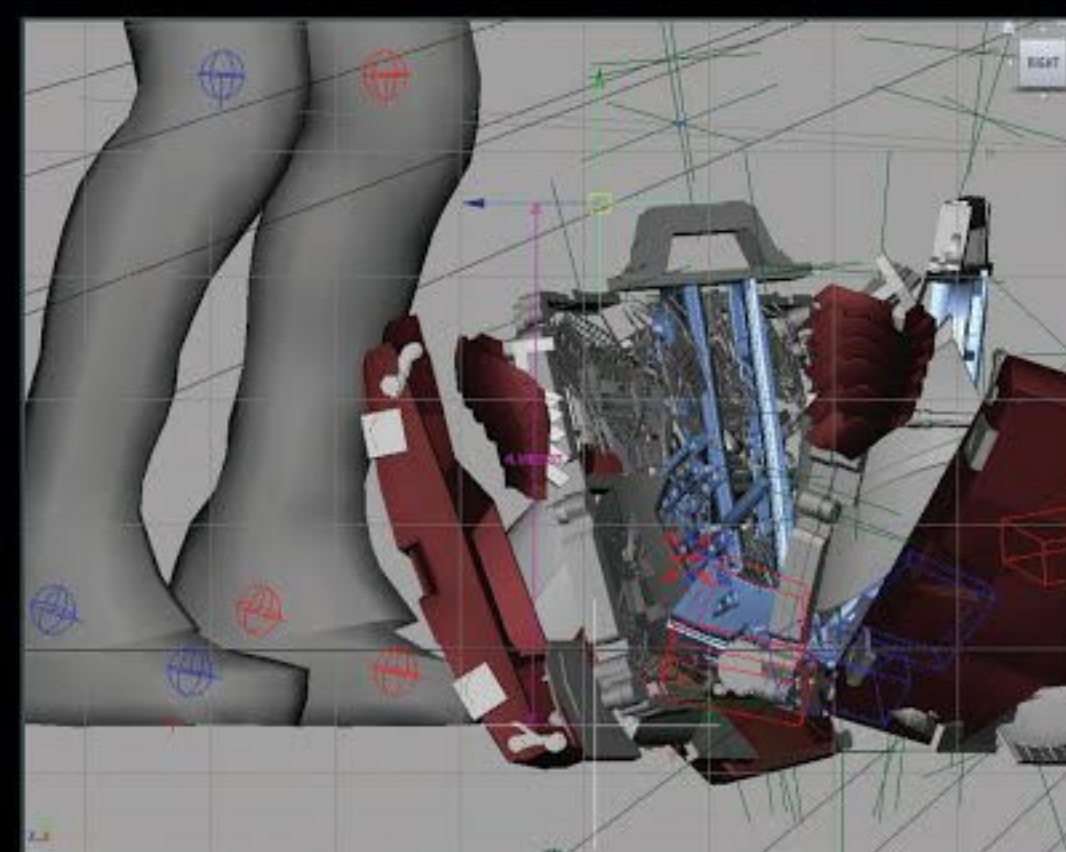
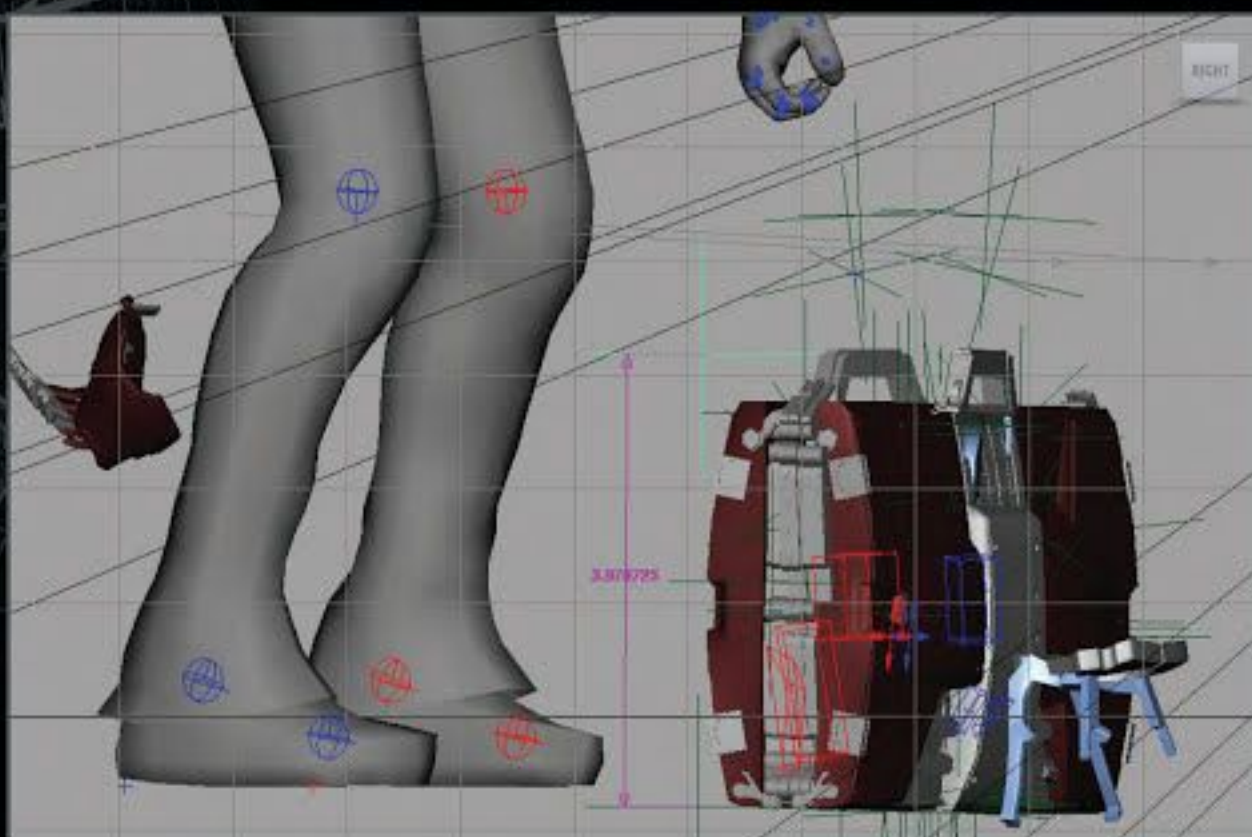
Meinerding: "The main design elements are really just to break it up into smaller pieces so it looks like it could fold in on itself, and do it in such a way that—when it's folding and

unfolding—it doesn't have magical qualities. And once it comes together that it has enough sort of consistency and coherency, it feels like an Iron Man suit."



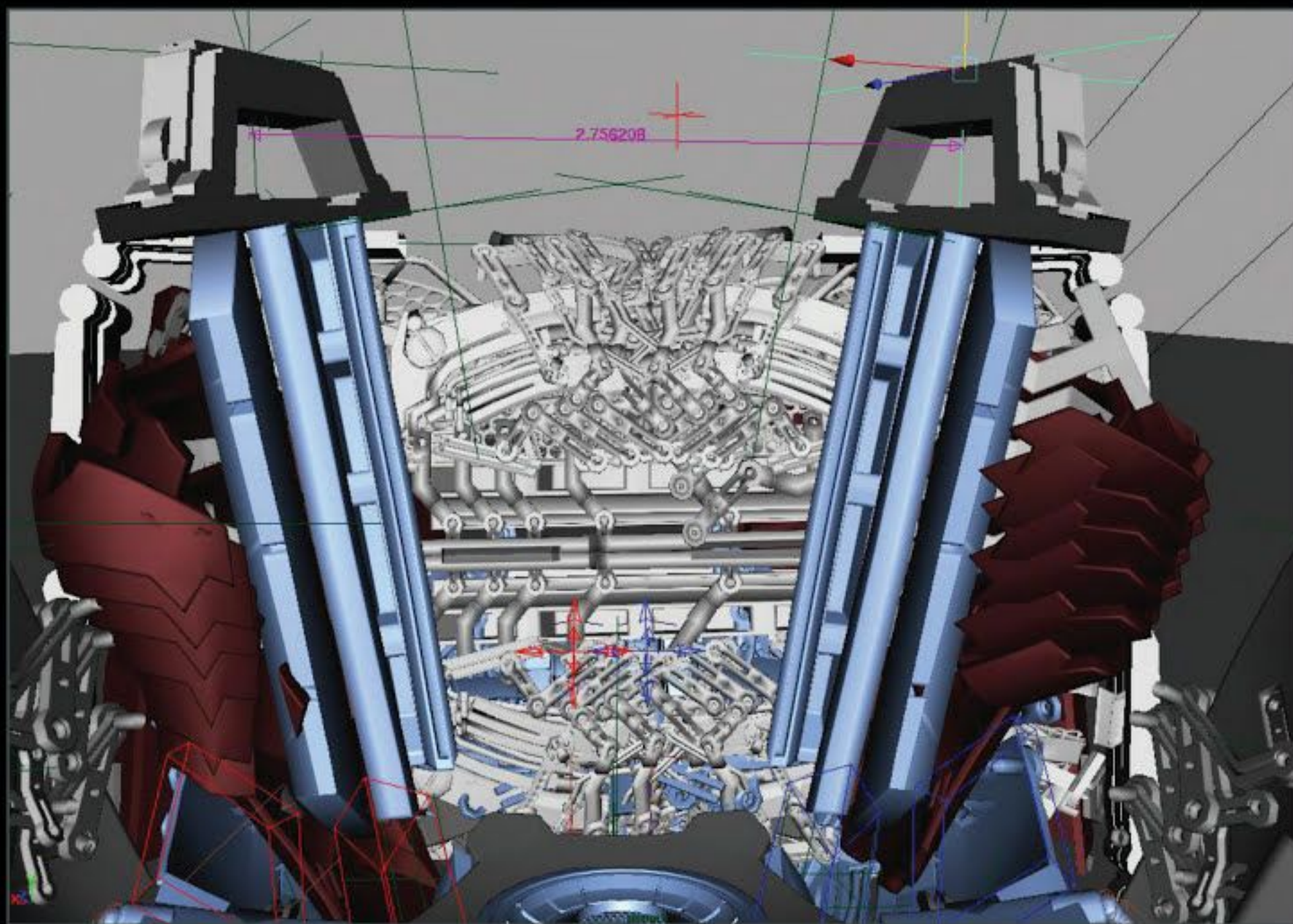
Meinerding: "The difficulty is that most of what Iron Man is, is sort of big, bulky pieces, so it's been a little bit of a challenge to find ways to

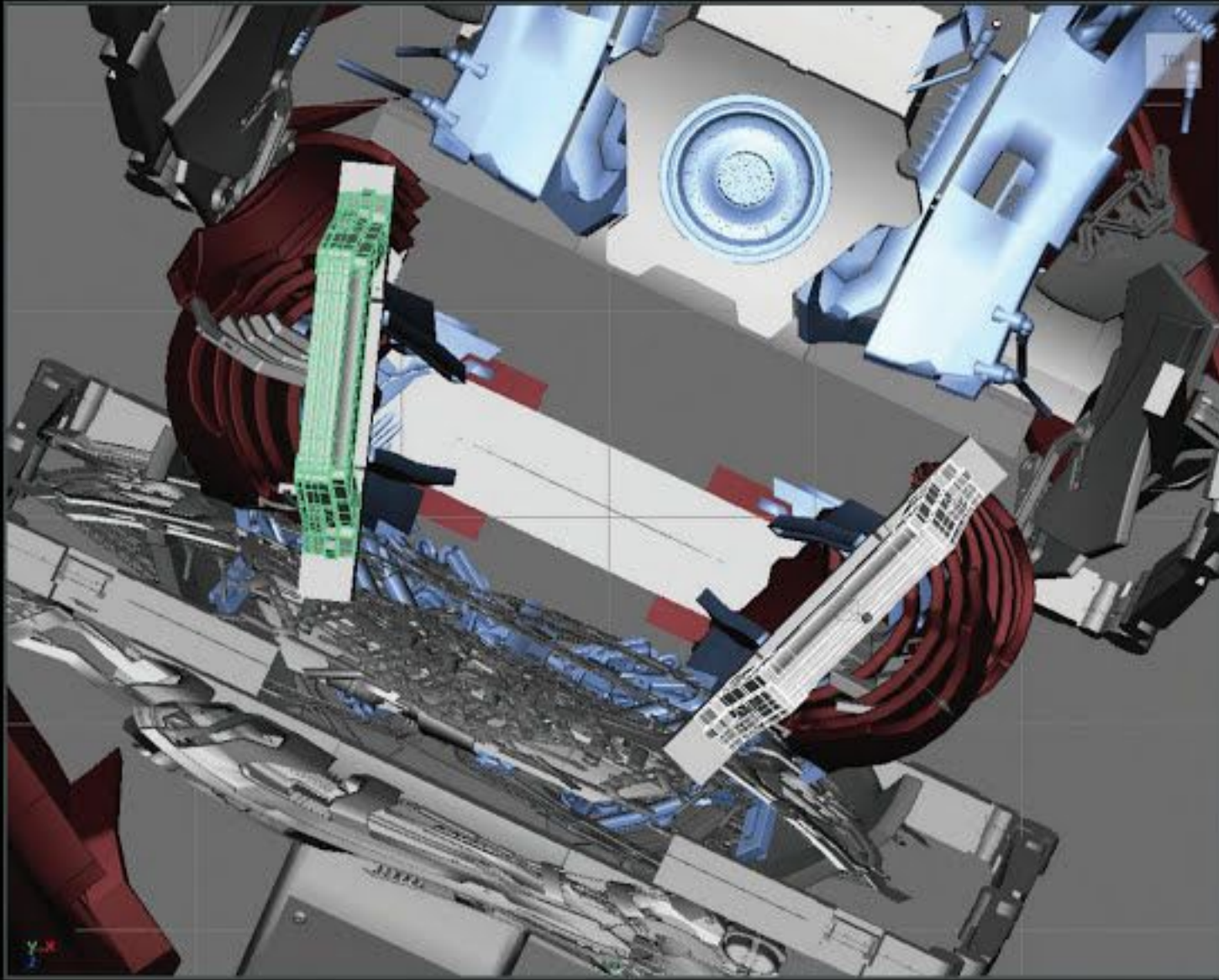
break that up in interesting ways that make it feel technology-driven and also believable, but also still hits that Iron Man silhouette."



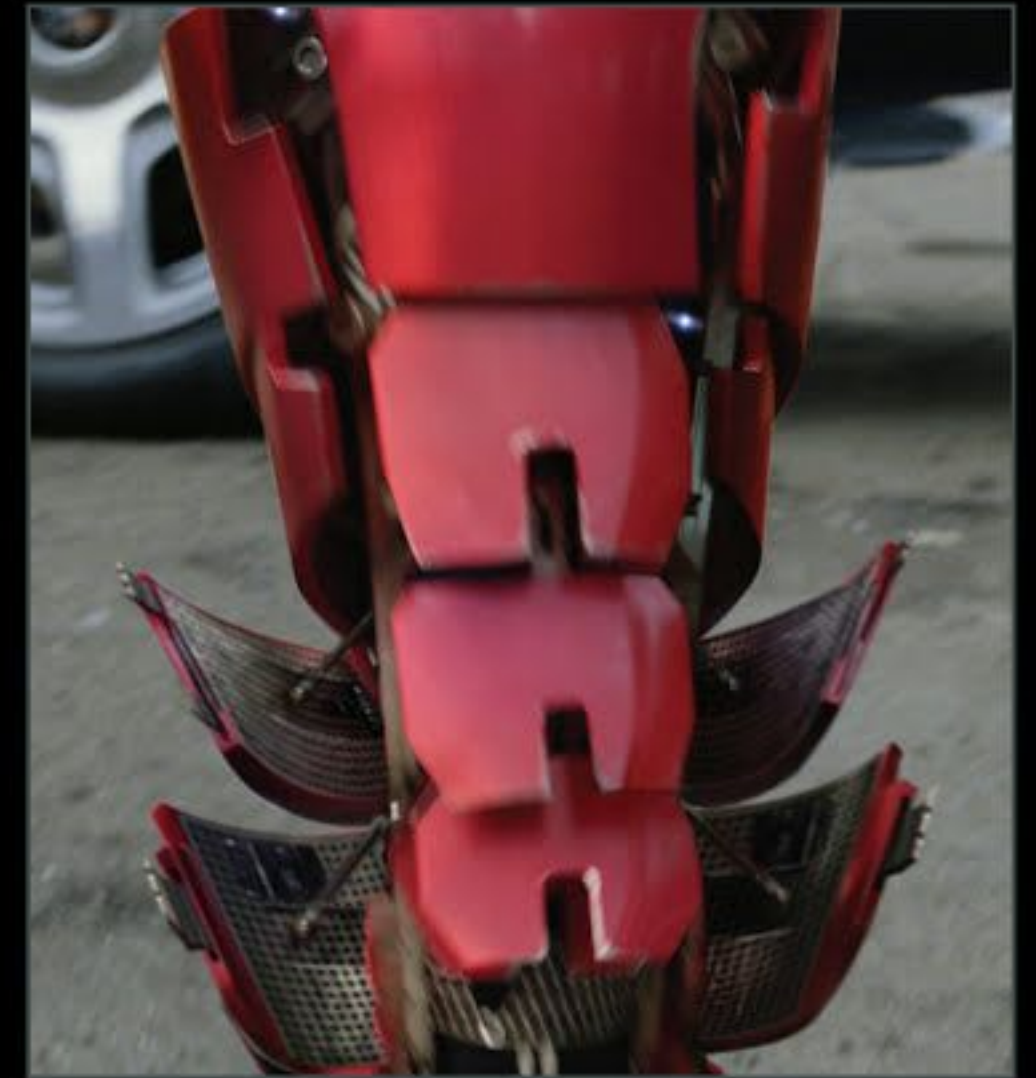
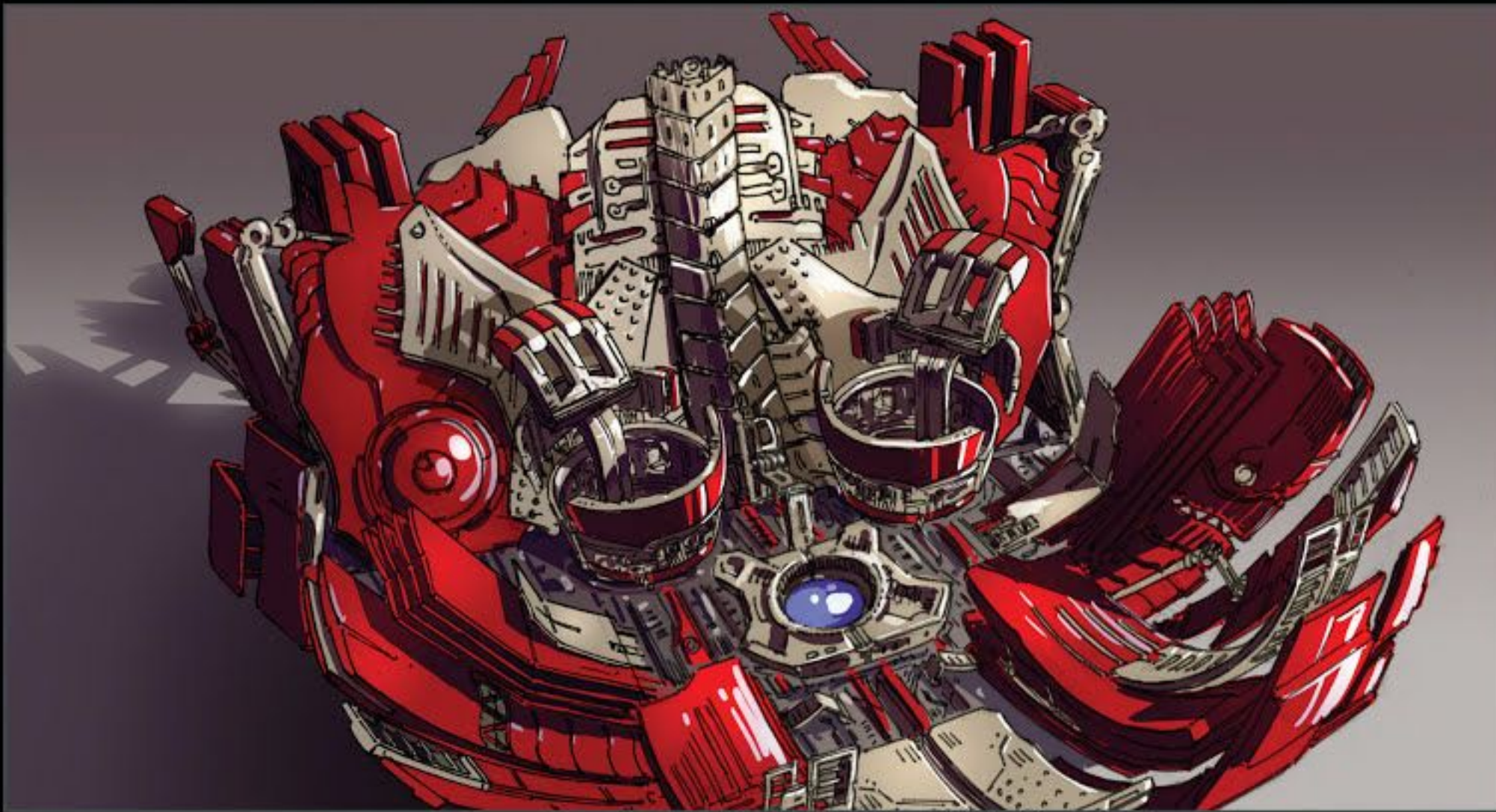
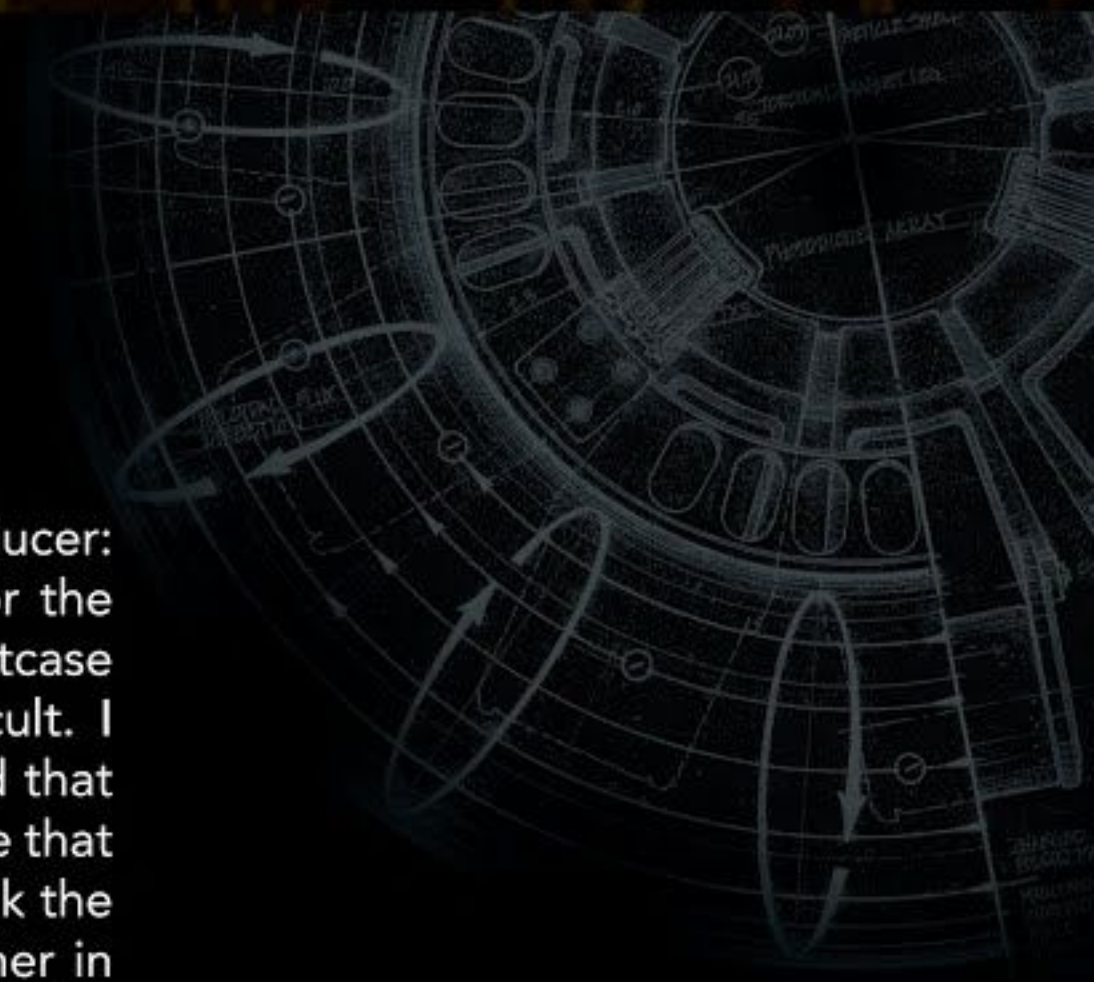
Feige: "I think fans are going to love the way the suitcase suit deploys. That's right out of the comics. In the '60s he would open up—it looked like a regular suitcase—he'd open it up, put on a glove, put on a boot, the gold would magically come over him and he was in the Iron Man suit."

"The suitcase suit doesn't have full weaponry, and he's kind of taking it for a test ride in battle for the first time, which we haven't seen him do before. That's going to add to the tension and to the humor that's going to come out of this sequence when he first faces off against Whiplash."





Jeremy Latcham—Co-Producer: "Finding a VFX house up for the challenge of turning the Suitcase Suit into a reality was difficult. I think VFX houses recognized that the suit was such a showpiece that it was going to make or break the film. We found a great partner in British VFX house D-Neg, and the work they have done to turn the suit into a reality has been really exciting to watch."





The Mark V armor was the only suit of Iron Man armor to be completely computer generated, with no practical counterpart.

Meinerding: "The fact that it doesn't actually have to fit around somebody makes it a little bit simpler because you're not hamstrung by anything that is actually a practical concern. There are so many cheats you can get away with in the CG world that it makes it a little bit easier."



Legacy Effects

Double Negative



Meinerding: "The way that reveal happens is going to be a really cool moment, and I hope the audience cheers that moment, because I think it's going to be great."

Legacy Effects



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Even the best super hero takes some powerful punches. And while Iron Man's armor is strong, it's not invulnerable. Double Negative created these digital mock-ups for the filmmakers to determine how much damage the Mark V suit would take in the initial battle with Whiplash.

Finally, on the basis of the digital mock-ups, a decision is made that clearly demonstrates the brutality of the on-screen battle, but that doesn't look too deadly for Tony Stark to have survived.





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Louis D'Esposito - Executive Producer: "Janek [Sirrs, Visual Effects Supervisor] started with us thirty weeks out from shooting, and he's here through the whole process. He is in constant touch with our special effects person and our Legacy people who are building the suits. It has to be a seamless connection between what he does and special effects does, and what the practical suits do. It's dealing with every department, on every issue, to get that seamless connection so it looks like they've done this all on-camera. That's our goal."



Right arm strike
Neck strike
Upper arm-shoulder-Helmet strike
Ribs strike
Leg strike_ FULL DAMAGE



IRON MAN MARK VI ARMOR



"That red-and-gold, what I think of as the 'lunchbox armor'—because it was on all the lunchboxes in the '60s and '70s—that was the suit for 20 years," says Tom Brevoort. While there was a change from the bulky initial model to a more streamlined, super hero-like armor, and there were relatively minor alterations in the armor periodically, "basically, that was the suit from '64, '65 to around '85."

But that would change. "The very first thing that came in, during the early '80s," Brevoort continues, "[classic Iron Man comics creative team] David Michelinie, Bob Layton, and John Romita Jr. hit on the concept of the 'specialty armor,' which is a perfectly obvious concept with a character like Iron Man, but nobody had done it before." That team developed the Space Armor, the Underwater Armor, and the Stealth Armor—purpose-built suits created for a specific task. "They started to adapt this idea and think about the suit as



more than just a prop. From there, the next natural evolution became, okay—here's this year's model."

That constant movement has become a cornerstone of the Iron Man character. "It's really two things," says Kevin Feige, "One: his suit always evolves, he's always upgrading it, he's always coming up with new ideas and new gadgets for it. But, two: he's iconically red and gold and the face of Iron Man is more or less unchanged."



That color scheme wasn't always the case in the comics. For a while in the mid-1980s, the familiar colors were replaced by the "Silver Centurion" armor. That storyline, culminating with the new armor in Iron Man #200, was the introduction to the comic for current Invincible Iron Man comic book writer Matt Fraction. "My first issue was 198," says Fraction, "and two issues

later he got a new suit so...in my head, that happened every three issues. He's the real, true, science-fiction super hero and he needs to constantly be upgrading and updating. It's part of the fun, and it resonates with his character."



One of the most synergistic elements between the comics and films has been the sharing of armor designers. While comic book artist—and creator of the then-most-recent armor—Adi Granov helped define the look of both Iron Man films, film designer Ryan Meinerding has just completed the design of the new comic book armor.



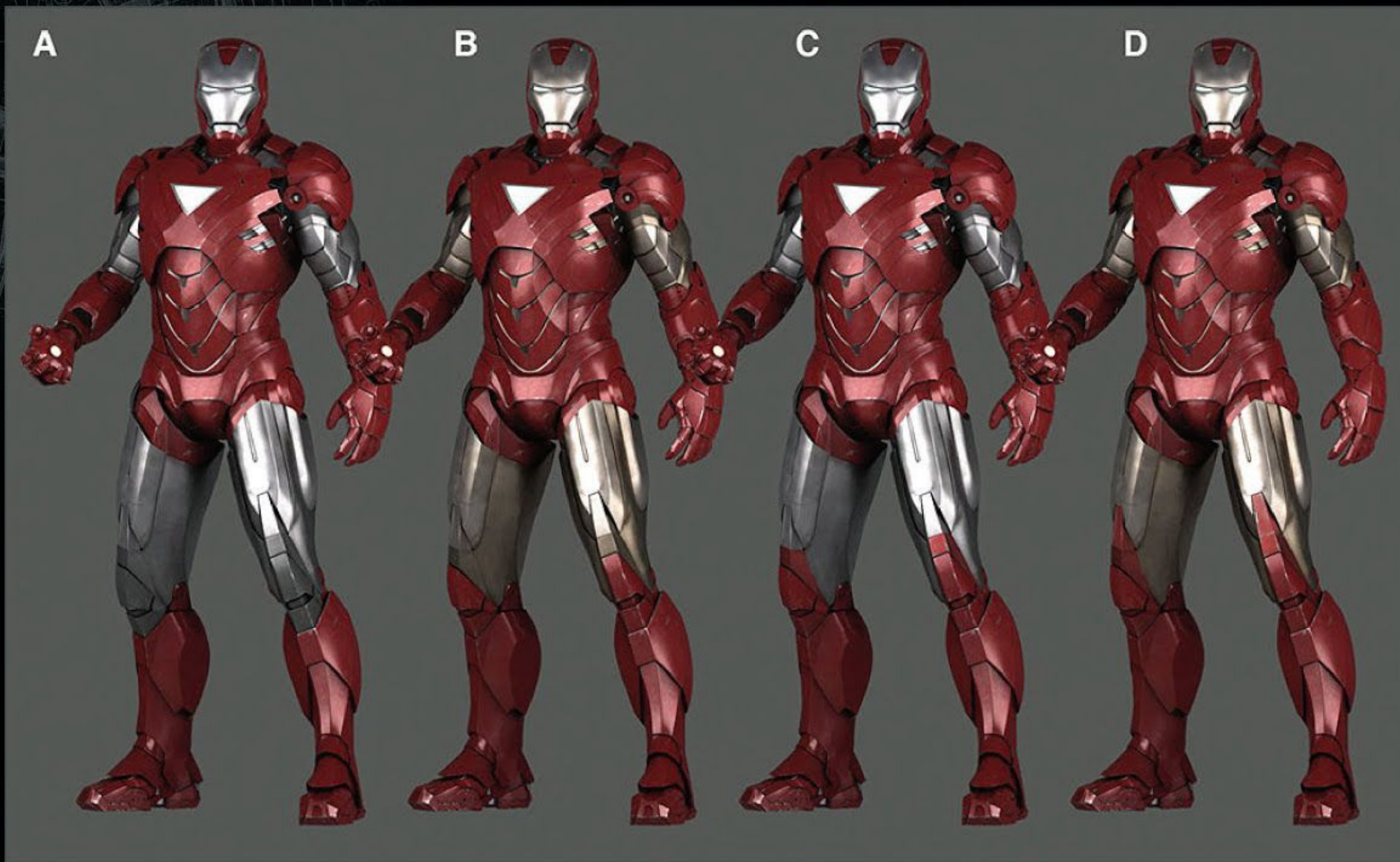
Feige: "[Tony] begins to notice that his body is reacting in a strange way to what is implanted in his chest, and he's got to fix it. Does he just have to fix the tech or does he have to change himself a little bit more, as he did in the first movie? It's a combination of both. The emotional changes that he's undergoing, this connection to his father, to his past, his relationship with Pepper, and of course overcoming this technical challenge—they sort of merge into the development of the Mark VI suit."





Meinerding: "The triangle RT was important because Tony's been getting sick over the course of the film because of his RT. He needs to develop a new RT, and they wanted a very clear explanation for what the new RT would be. Switching it from circle to triangle just seemed to make the most sense. And it was the most iconic thing we could think to do. So when he starts off the movie, he's in that suit with the circle and then when he actually makes the new RT, he replaces it and changes the suit at the end."





This "color break-up chart" was used to determine exactly how much red and gold would be visible in the Mark VI armor, and to see whether the filmmakers wanted to call back to the comic book "Silver Centurion" armor and introduce any silver into the final design.

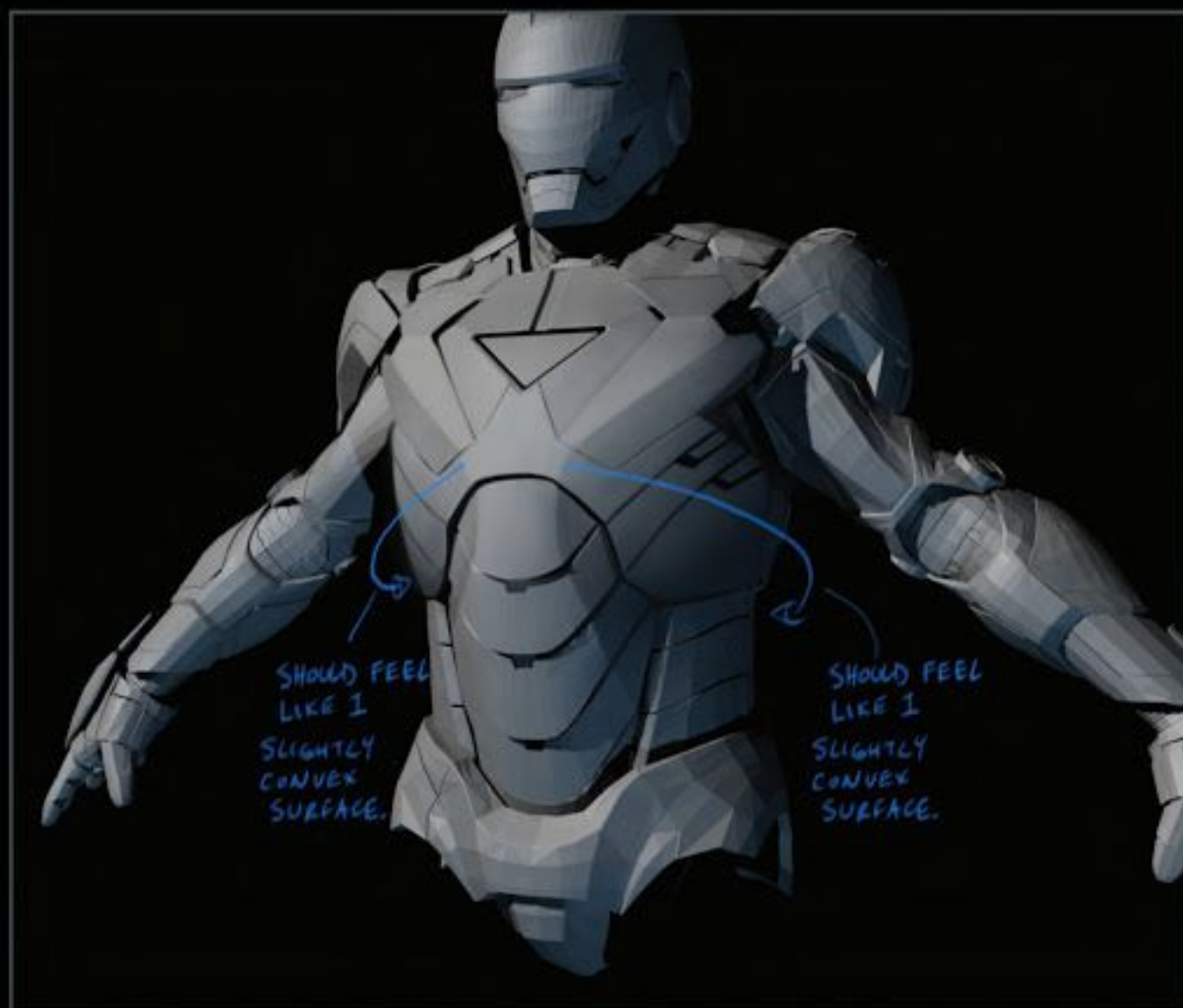
Meinerding: "The second you change the color, it's really, really easy to get away from being Iron Man. There are going to be other colored suits in the movie, and I think that we did want to deviate at least a little bit for the different versions of the suit. By the time we get to Iron Man 3, there will probably be a great number of suits, and I think that being able to deviate is probably very important."



Above is an early 3D digital model—an attempt to bring Ryan’s drawings to life in the digital realm. This model leads the way for creating the physical suit at Legacy Effects and the digital suit at ILM.



Victoria Alonso – Co-Producer in charge of visual effects:
“The way that Jon Favreau likes to work is that if he can’t tell that you’ve done your job, you’ve done a great job—because the more real that we make it, the more grounded that our super hero is. And one of the key issues in making Iron Man successful is to have made him quite grounded.”





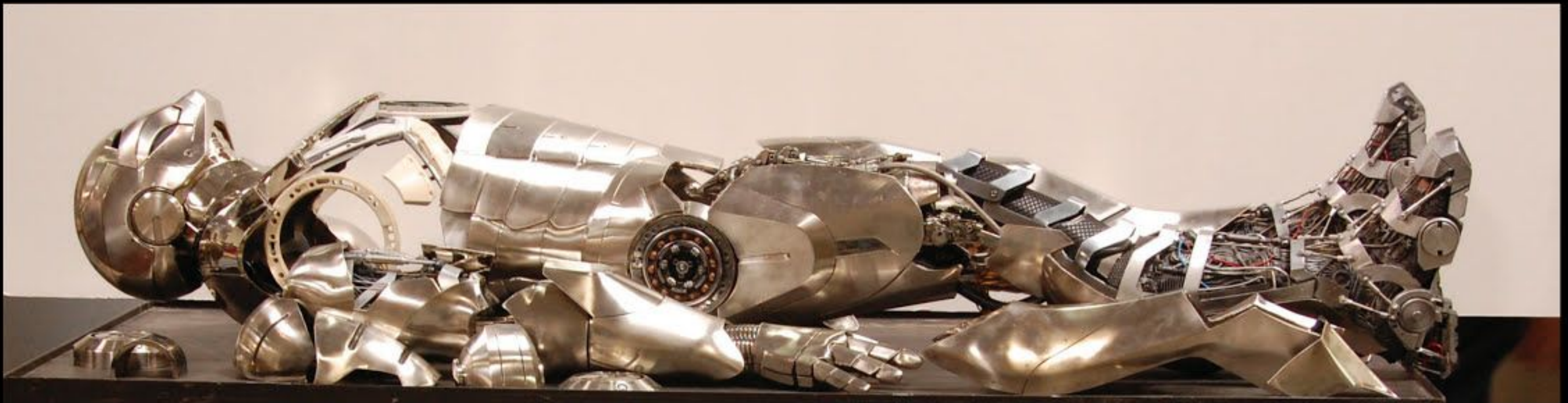
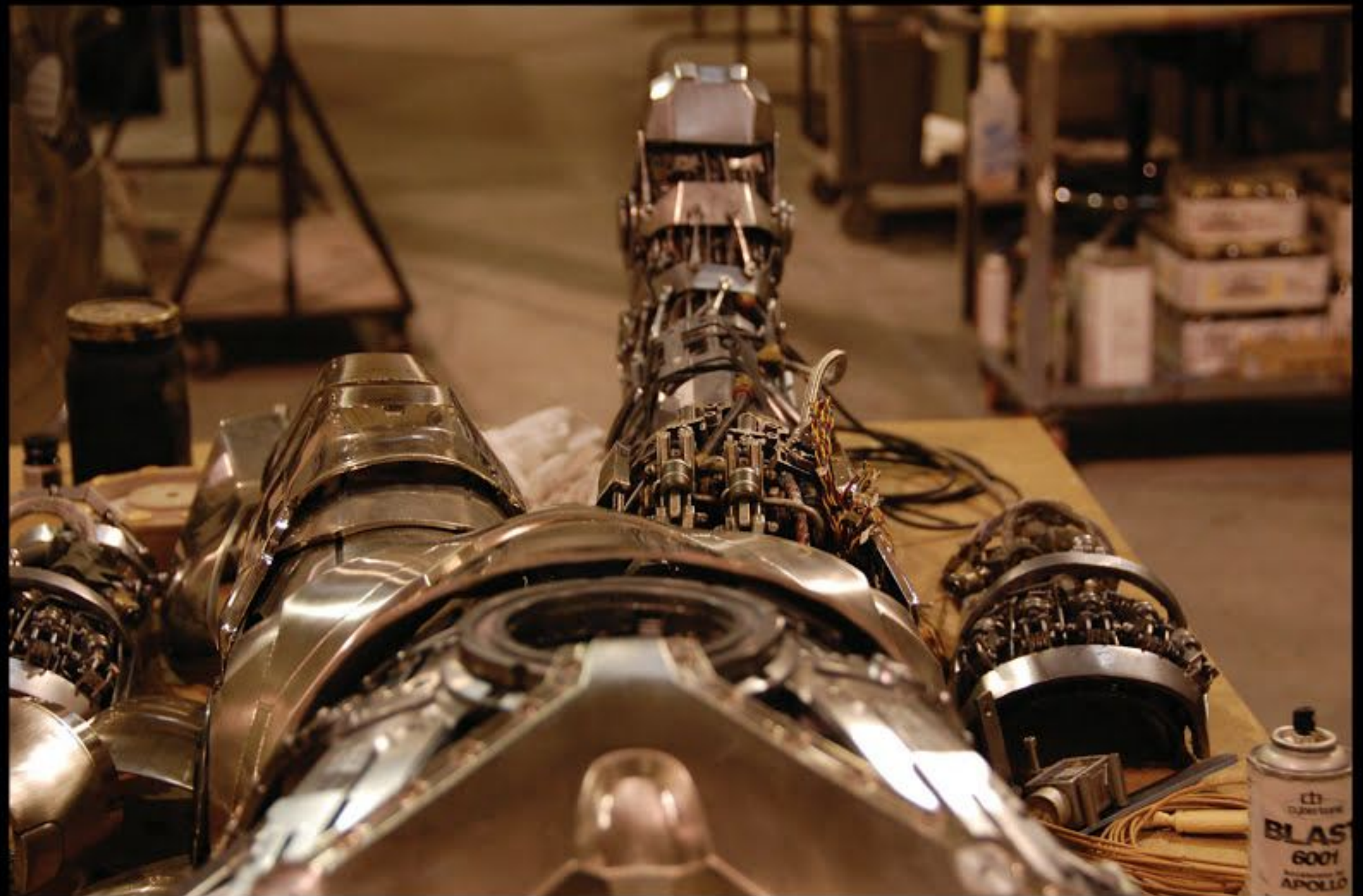
These images represent a close-to-final 3D render by ILM.

Alonso: "Iron Man, the first one, that was our 'R&D' about our character, because now in the second one, we know how he moves. We know how he behaves. Robert [Downey Jr.] as Tony moves very differently than Iron Man does. We try to keep the personality of Robert, but the Iron Man movements are very, very different. The suit is about 1,000 pounds, so... Robert is quite quick on his feet, and if you keep that lightness with the suit, I think you lose the reality of 1,000 pounds of metal on you."



THE ART OF IRON MAN 2

Mahan: "It can't look like a guy in a suit. Great stuff has been done in the past, but this is not where we want to go. It's got to be what happens if the comic book proportions are brought to life. That was the interesting challenge of getting the right proportion of the suit to the girth of the shoulders to the size of the head. And when we were modeling it, I kept forcing the issue. Make the head smaller, smaller, smaller. Make it as small as you possibly can. Make the legs as long as you possibly can."





D'Esposito: "We had to put actors in a suit that had heroic proportions that don't really fit many human beings. So how do we get around that? How do we get the reality of the suit on the set, but still make it comfortable for our actors and/or stunt people to wear? We said, 'Listen, let's lose the legs because the movement's not working, and we're going to have to recreate that anyway.' We get the movement of the actor or stunt person; we're tracking their movement—it's almost like being in a motion capture stage—and we're getting the reality of the suit on the torso."

Mahan: "An illustrator has to understand, you have to make it fit the anatomy of a person. You can't cheat the proportions and you can't cheat perspective to hide something. Everything's going to be visible. So finally the maquette, from the waist up, Robert Downey fits in that. The other proportions are correct, and once we designed that and built that, then the digital companies could take that physical, full-size piece, scan that one and use that as the basis for their computer model. They would obviously tweak it a little bit more, like take the waist in—just subtle little changes—maybe make the arms a little longer. But you really are hard-pressed to determine which one is which."



The Mark VI armor went through the same procedure as the Mark V. Note the severe gash on Iron Man's torso—a graphical depiction of the power behind Whiplash's whips. The ILM digital battle damage is designed to match up with practical elements.





D'Esposito: "We try to use practical suits whenever possible, but I think the most successful [shots were] what ILM did in some of those sequences, where you really think it's a suit. And they've come such a long way, but it's also knowing how to put together

'this bit is practical, this bit is CGI'—so that you're taking the best of both to achieve a goal. Photorealism in these types of movies is our goal, so how do you achieve it?"

HALL OF ARMOR

Favreau: "The Hall of Armor is something that we borrow from the books. It doesn't totally make sense, but he's got every version of the suit lined up there. It's kind of a trophy room and kind of a dressing room. We have three suits in the first film, so we figured that he salvaged the first. Last time we saw the Mark I, it had been brought back by Obadiah [Stane] and it was down below the Arc Reactor, so we figured he dug it out of the wreckage and reconstructed it. The Mark II he had, and the Mark III we saw him wearing at the end of the first one. And then we figured that he built another version, so we have the Mark IV, which is similar but slightly different in design, and so there he has his four suits lined up. I'd imagine the Hall of Armor is going to take up the whole room, at some point."

Feige: "In this film, it's been six months, he's made four Iron Man suits. He's got them lined up, he's got them in his Hall of Armor that will continue to expand over the franchise, knock on wood. And it's right out of the comic books. Tony Stark has the Hall of Armor, in which every version of the suit that he's built over the 50 years of comics is there. And he mixes and matches and he changes them up, and sometimes he'll just put on an old one, based on whatever the villain is that he's trying to conquer this week."

"[Production Designer] Mike Riva designed an amazing set piece for us. We took it with us to Comic-Con, it's traveling the world now, and it's just amazing to see people react to it. As they look up at it, they get their picture taken with it."



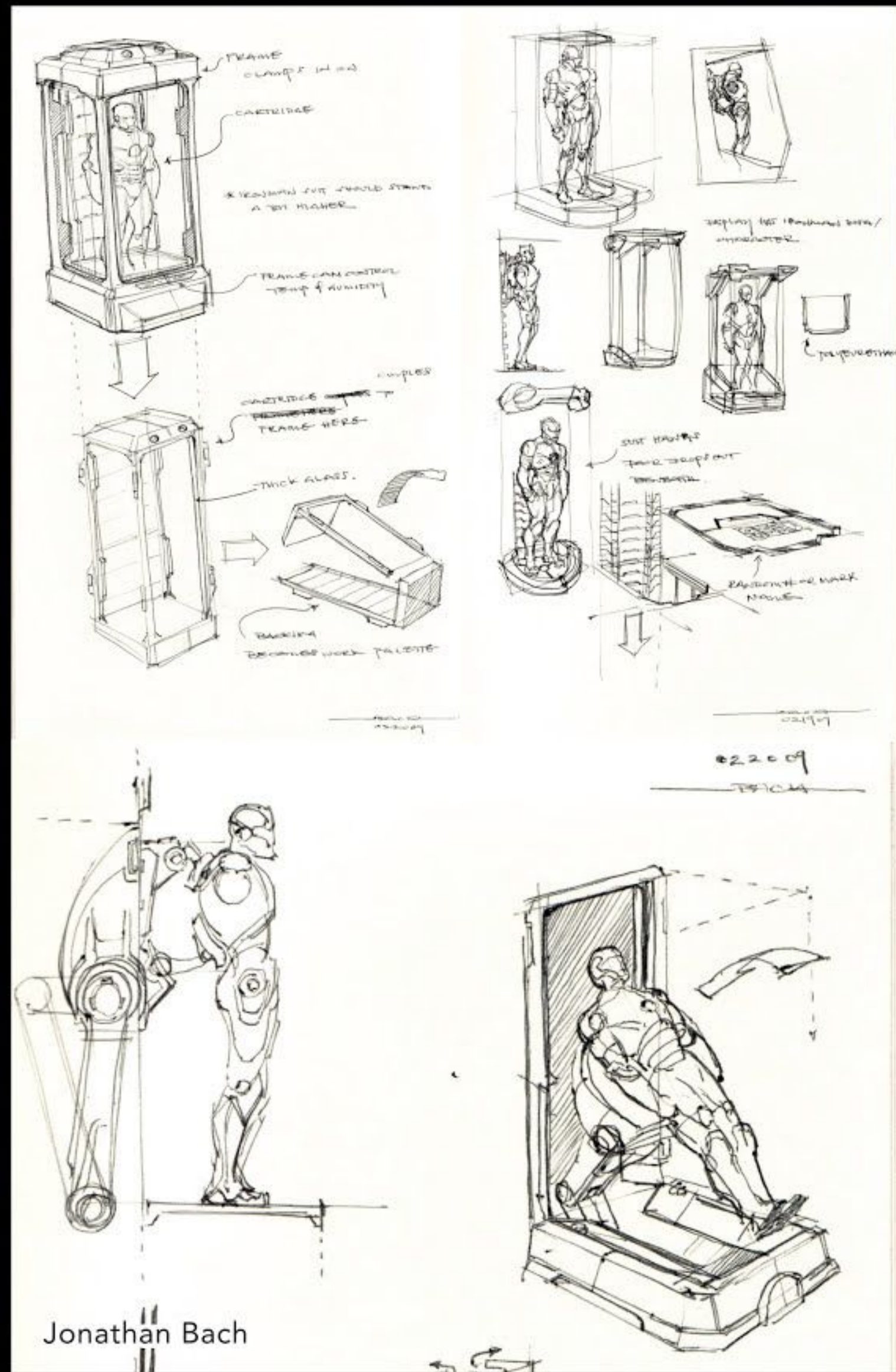
Production still



Production still



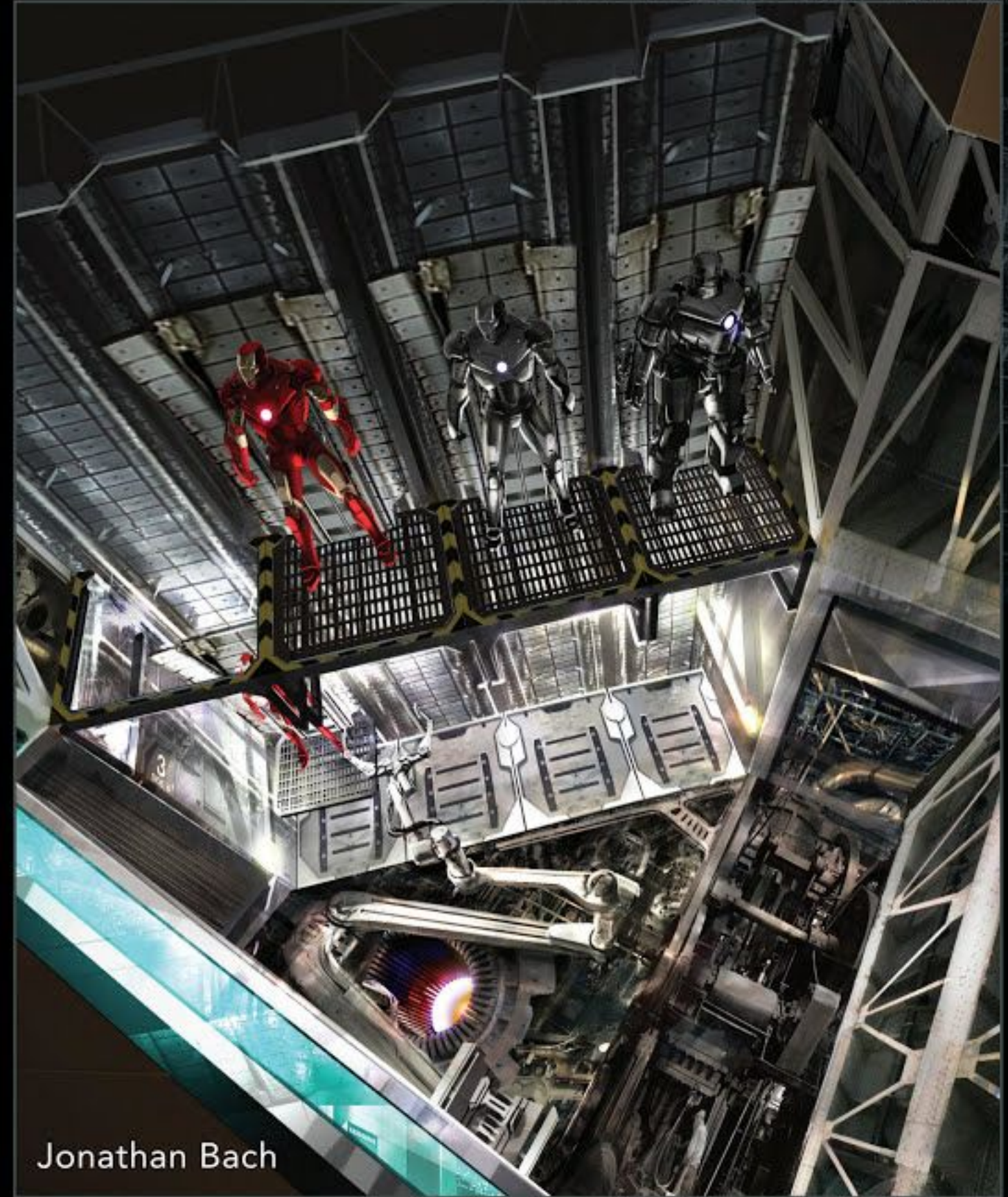
Production still



Jonathan Bach



Jonathan Bach



Jonathan Bach

Meinerding: "The Hall of Armor is pretty cool to me. I think that there have been a few other voices on this movie that may have been like, 'Well, why would he keep that stuff? Why would it be around? Why would he even bother having the Mark I?' And I'm like, 'I want the Mark I to be there for personal reasons, but nevertheless as a fan it's pretty cool to see.' Hopefully the line of them will just keep getting longer and longer. I kind of can't wait to see that, because there are the specialty suits I think that people are amped to see, too. Like what would the underwater suit be? What would the lava suit be?"

Ryan Meinerding



Jonathan Bach





Comic Con mini one-sheet

2009 San Diego Comic-Con Exclusive Poster

CHAPTER TWO: *BROTHERS IN ARMS*

Iron Man's comic book supporting cast has had a long and storied history. We met some of them in the first film, but it's in Iron Man 2 that Tony Stark's friends and allies really come into their own. Joining Pepper Potts (played by Gwyneth Paltrow) and Happy Hogan (played by Director Jon Favreau) are some of the best friends a guy in a multi-billion-dollar suit of armor could ask for.

With War Machine, Black Widow, and Nick Fury joining the fray, Tony Stark might have a chance after all. But the creative minds behind Iron Man 2 were aware of some of the dangers of over-loading the audience with a new cast.

Kevin Feige explains, "There have been good sequels, there have been not-so-good sequels, and what we've learned (and we learned early on) is you can't just feel the pressure to add the new character—add in this fan favorite, put in this new villain. You'll collapse very quickly under the weight of all your characters, of all your plotlines, of everything you're trying to service."

Instead, while the audience is excited about seeing new characters, the filmmakers have to be careful. "What we try to do," says Feige, "and what I think we've achieved in Iron Man 2, is only introduce new characters that will have an impact on your main characters. Which will make it more interesting to watch your main characters deal with the new curveballs being thrown at them by these new characters you've introduced."

Executive Producer Louis D'Esposito sums up the benefits of adding to the cast: "There's always this need to top yourself, and sometimes that can get in the way a little bit. But look at our cast right now—it is phenomenal. I have friends that are in the industry call me up and say, 'You're making a serious drama over there with the actors that you have,' or 'You're making an art film; you're not making a super hero movie.'" It's exactly that special chemistry that makes the Iron Man franchise what it is."





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WAR MACHINE



James Rhodes first appeared in Iron Man #118, in 1978. Another character brought in by David Michelinie and Bob Layton—this time with John Byrne—Rhodey was Tony Stark's pilot...but there was more to their friendship than that. It was soon revealed that, after Stark escaped from the cave where he had first built the Iron Man armor, he was rescued from his pursuers by Rhodey, who was repairing a downed helicopter nearby.

Later—when Tony succumbed to his alcoholism and had to give up being Iron Man—it was Rhodey who took over the role as the

Armored Avenger. For many fans growing up in the early 1980s, James Rhodes was Iron Man. He temporarily took over for Tony again in 1992, but this time graduated to his new identity of War Machine—a souped-up, ultra-powerful version of the Iron Man armor—in Iron Man #284 by Len Kaminski and Kevin Hopgood.

Rhodey has always been far, far more than a sidekick to Tony, and the introduction of War Machine struck a chord with 1990s audiences. War Machine became—as James Rhodes had been in the Iron Man guise—a member of the West Coast branch of the super hero team the Avengers. Over



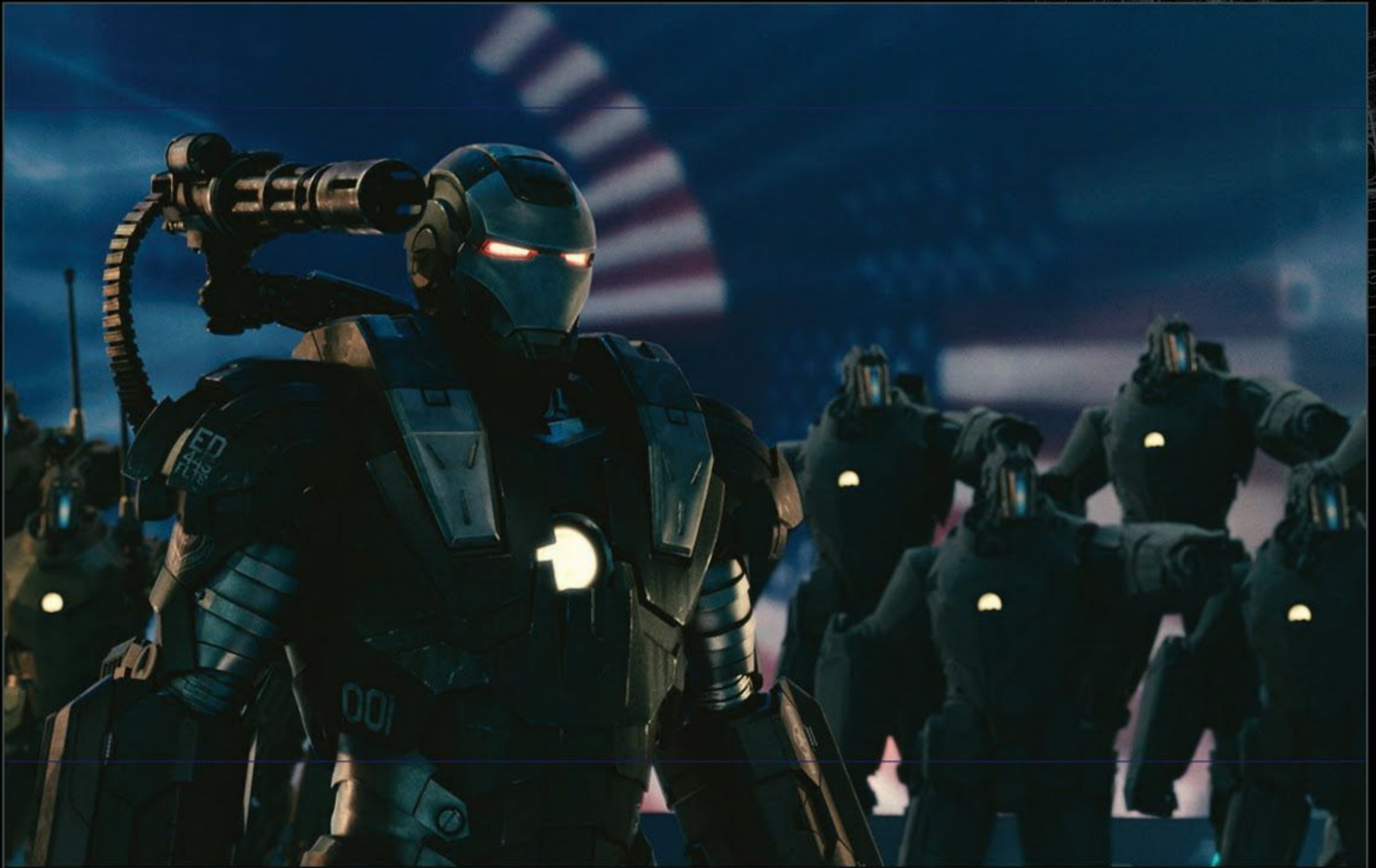
the years, War Machine has starred in no fewer than four solo comic book series, with another on the way.

"We thought there was something really cool about having James Rhodes," says Jeremy Latcham. "In the comics, Tony becomes such an alcoholic that Rhodey grabs him, takes him to his aunt's house, sticks him in the attic and tells him that he's gonna go take care of business and puts on the suit and goes and does it. Rhodey is constantly dealing with Tony, and he's constantly cleaning up his mess. And it's something that probably gets really frustrating."



Their relationship has changed since the last movie, as Kevin Feige explains. "Tony doesn't make weapons anymore, so his role as liaison to Stark Industries for the U.S. military doesn't exist anymore. He's now a liaison to Hammer Industries—they're the ones that are taking over most of these contracts. There comes a point in this movie where the two of them have a major, major blowup—and it'll be interesting to see who the audience sides with, because we think they're going to side with both. When best friends start going at it, they both have a point, they both have a reason."

"Part of what makes the Marvel comic books cool is it really becomes about friends," Latcham sums up, "and it becomes about the people under the armors."



Favreau: "Part of [the dynamic between the characters] is how are War Machine and Iron Man different, how are they competitive, what's that friendship, how is that [armor] an extension of their

friendship, how does Rhodey change when he puts it on? The character gets more interesting, and Don Cheadle is remarkable in his ability to have chemistry with Robert."

Ryan Meinerding



Feige: "The War Machine in our film is built upon the base of the Mark II, the suit that Tony builds in Iron Man. He goes on his first flight, he crashes through the house, and he puts it in the Hall of Armor. Over the course of the sequel, Rhodey gets his hands on that, brings it back to the military. Tony's not turning anything over, Tony has gone rogue by this point, and the military believes—based on certain contracts from the past—that they have the rights to this armor."

Adi Granov



Adi Granov



4b

Adi Granov



4



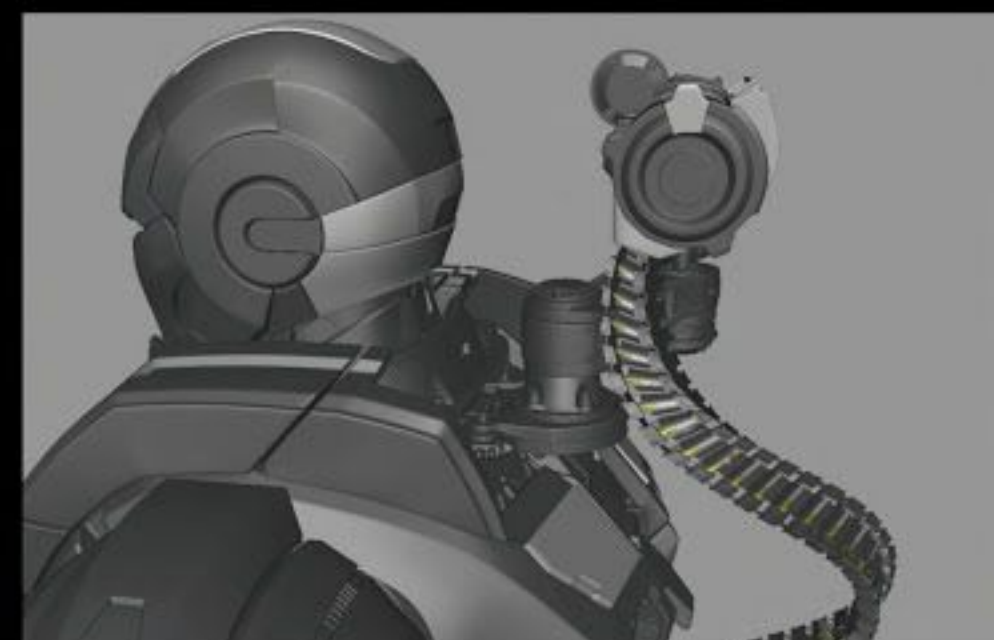
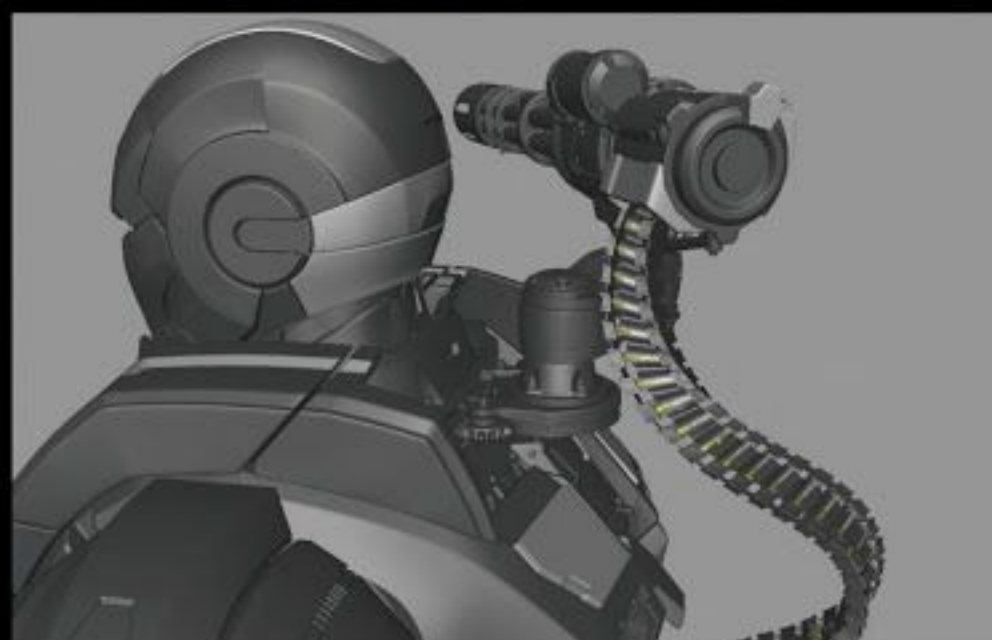
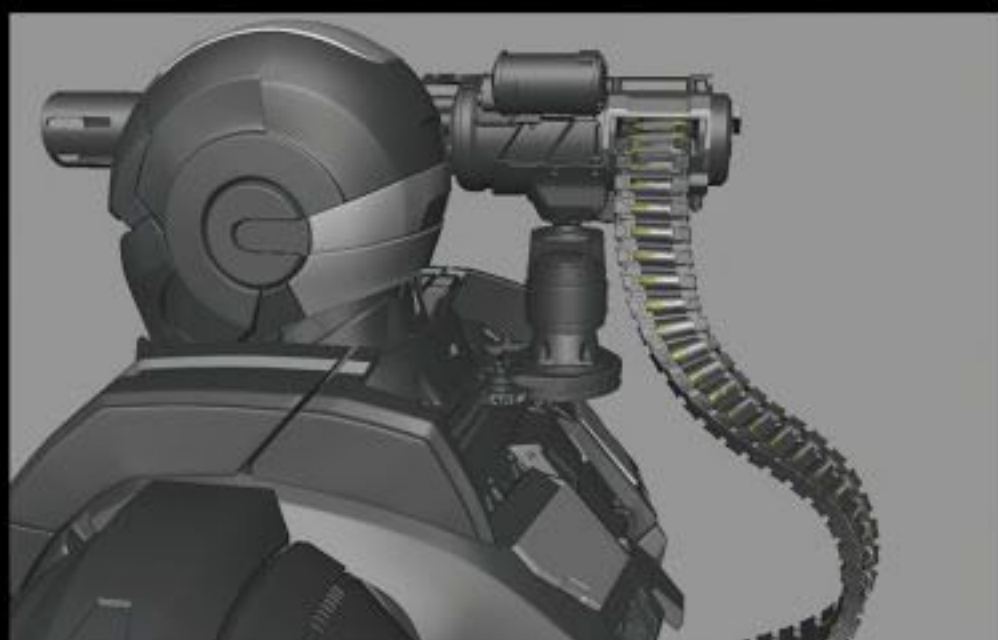
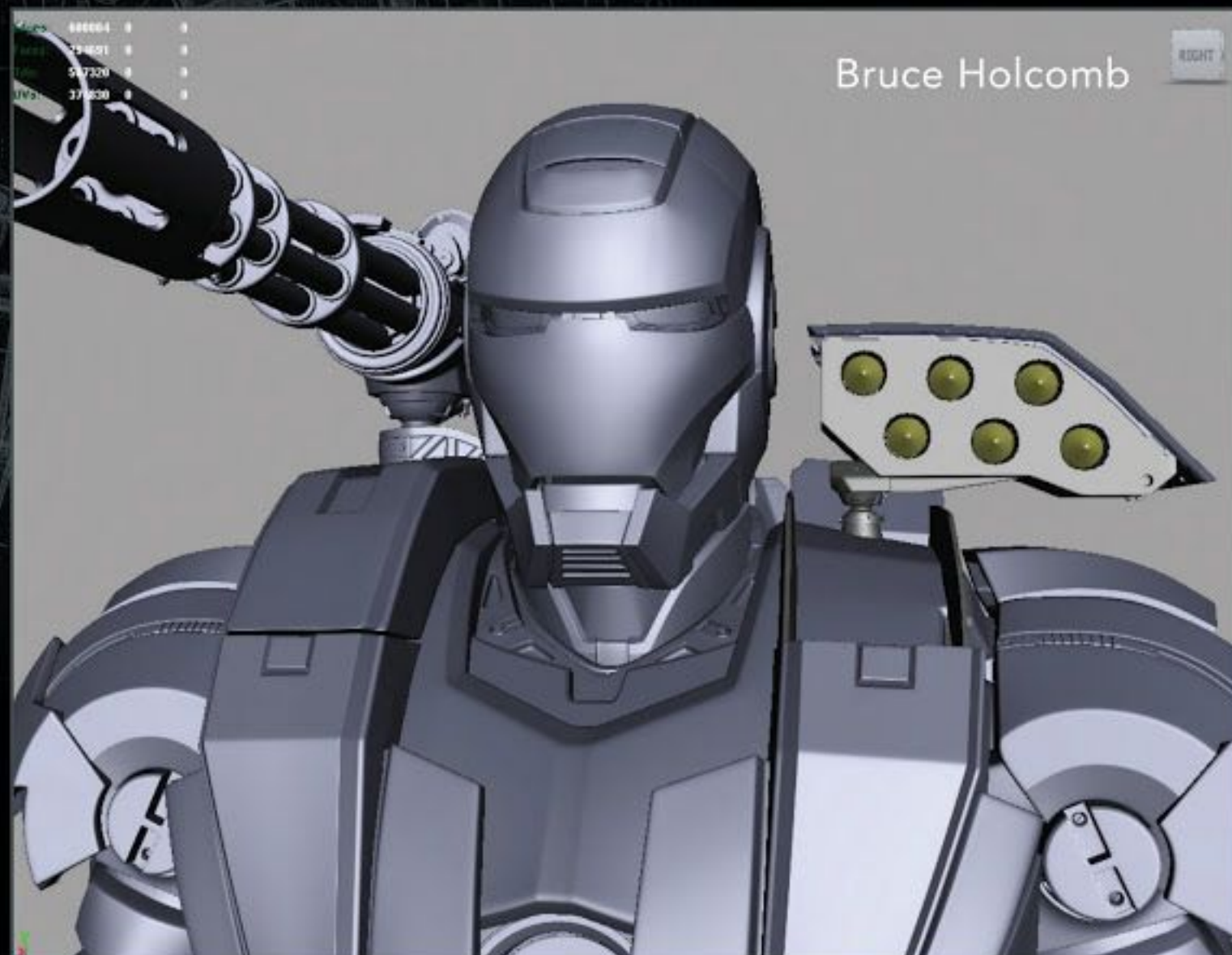
Adi Granov—Conceptual Consultant: “Ryan did several initial takes on War Machine, incorporating various elements of my designs of the character on the publishing side. Based on the feedback received from Jon [Favreau] and [Marvel Studios], he eventually reached a point where he could start using what he had in keyframes, and then did the orthographic turnarounds for the 3D models. I think on both films we were lucky to have come up with a strong overall direction early on, which meant most of the time was spent on refining the details, adding technology, etc.”



Ryan Meinerding



THE ART OF IRON MAN 2



Favreau: "I identified certain weapons I thought were cool, of course culminating in the minigun, and then [screenwriter] Justin [Theroux] wrote about the 'Ex-Wife,' this little cigar-sized missile that was so devastating. And it was described with such superlatives that it was

my favorite writing of Justin's. It was just such a fun way to set up what this War Machine suit would be, because no matter what you saw it do, you knew what went into it and how much firepower was there, and how over-the-top this thing was going to be."

Bruce Holcomb, Ron Woodall,
Rene Garcia, Tim Brakensiek.

RASPUTIN (IM2) PROP CONCEPTS

VERSION "C"



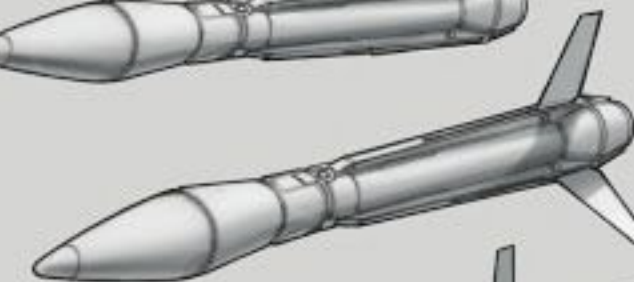
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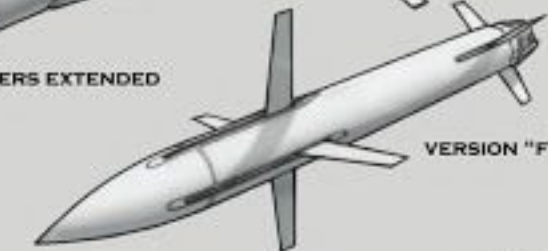
VERSION "E" WITH STABILIZERS RETRACTED



VERSION "E" STABILIZERS EXTENDED

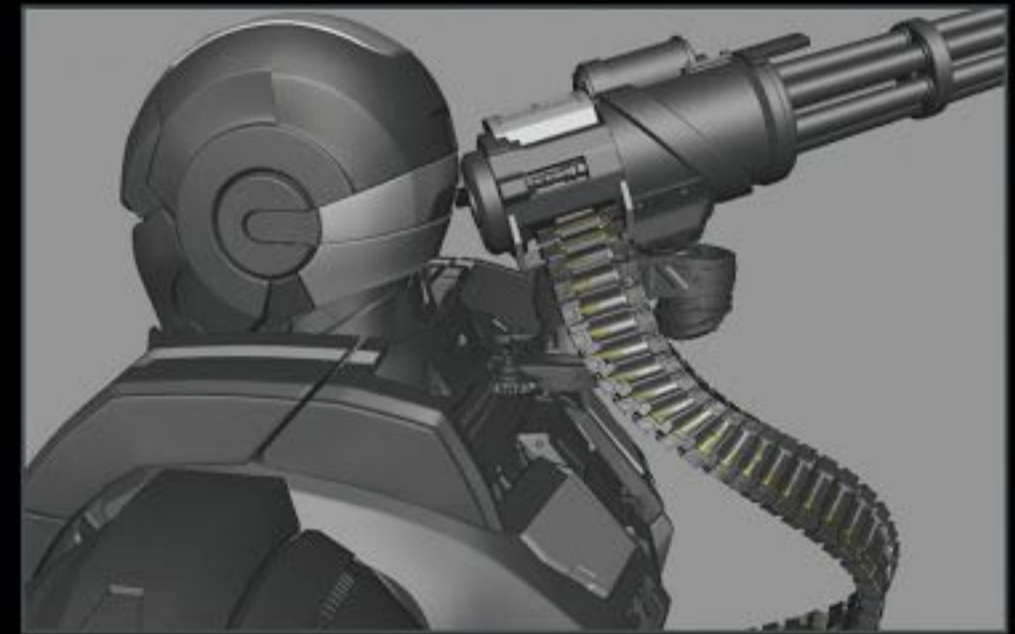
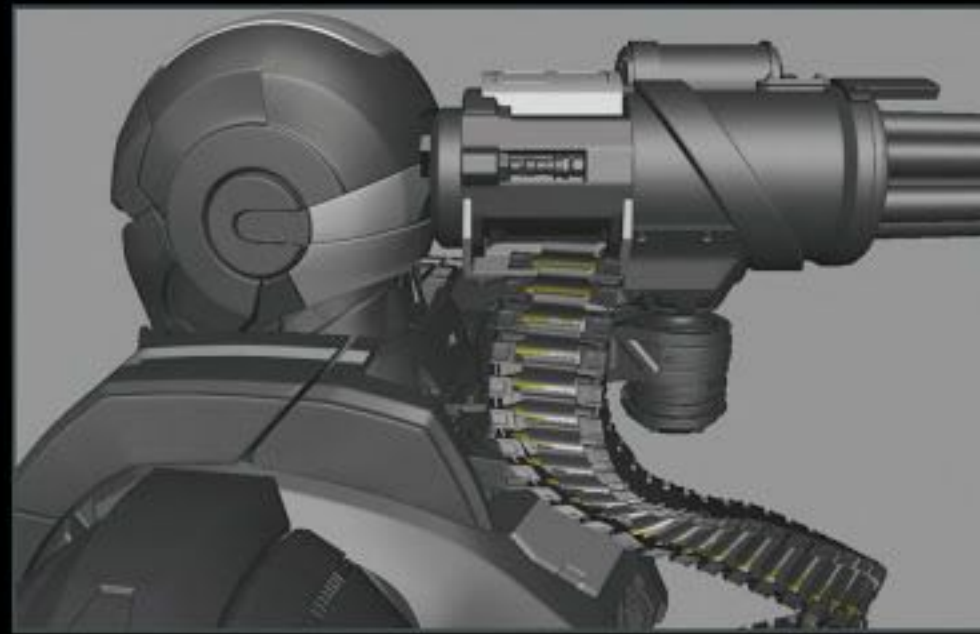


VERSION "F"



RASPUTIN (IM2) PROP CONCEPTS

JOHN EAVES 506



Meinerding: "The biggest challenge for me is the fact that you've got a minigun on his shoulder. And if the minigun doesn't rotate, somehow, all the way around—he's not going to be able to fire on the other side of his head. That's a big challenge that I think when you're reading comics, you don't necessarily notice. So coming up with ways to make that work and try to make the ammo feed

believable—because there's also practical concerns for how the bullets would get up there, and where to store the bullets. Things that hopefully no one is going to question...maybe a few people will question but hopefully we designed it well enough so that it's not the first thing on their mind."



Granov: "Most of the direction came from conversations I've had with Jon Favreau and the Production Designer Michael Riva, as well as comparing a lot of notes with Ryan Meinerding. For nearly all of the keyframes, Jon would either have an idea for a scene he'd like, or would simply let Ryan come up with something cool. The amount of freedom he was allowed on both films was fantastic and very surprising."





THE ART OF IRON MAN 2

Feige: "They don't have Tony Stark adapting [the technology]. They don't have his engineering genius to make everything sleek, to make missiles pop out. In fact, they don't care. It's much less about the sleekness and the cleverness of the design. It's 'put a giant gun on my shoulder, put a missile pack on my shoulder, just clamp on the big 50 cal's on my forearms' and he'll have a go. How bulky we could get, how many weapons we could fit on it, and still have it look like a guy could walk around in it... Those were the challenges, but when you have Industrial Light & Magic, when you have Legacy Effects bringing this to life for us, it's just a huge pleasure to see it come together."



Legacy Effects



PLF



The practical War Machine suit—including the helmet, opposite, and the many pieces on display on this Iron Man 2 production table—were created by Legacy Effects and are stunning in their detail and intricacy.

Favreau: "We knew that we wanted Rhodey to put on the Mark II, and that the Mark II would be the basis of War Machine, and we knew that there would be some tension between the two friends as Tony became further and further derailed. That suit being weaponized was our opportunity to do War Machine. Here we had Justin Hammer, a government contractor having a relationship with Rhodey, and so we unveil the gun-riddled version of Iron Man that is War Machine."



THE ART OF **IRON MAN 2**



Like with the Iron Man armor, the production team evaluated different levels of potential damage for War Machine to sustain.



The miniguns and other weapons systems provided additional challenges. Here, the minigun and ammunition have been removed, leaving only the gun's mount.

BLACK WIDOW



Soviet spy turned super heroine Natasha Romanov—a.k.a. the Black Widow—has been an enduring and deadly character since she first appeared in *Tales to Astonish* #52 in 1964. The Stan Lee, Don Heck, and Don Rico character was something outside the norm for the super hero world. “There was something very interesting that Stan did,” recalls Ralph Macchio. “There was something different about her—she was sort of a femme fatale. And if I remember correctly in her first appearance she wasn’t wearing a costume.”

Indeed, it would be several years before Natasha’s trademark skintight black outfit appeared. “Eventually, they gave her the butt-ugliest costume ever,” recalls Tom Brevoort. “This atrocious gray-purple fishnet outfit with a cape and a little ‘W’ mask. Basically, John Romita redesigned her head-to-toe—literally head-to-toe, because her hair color changed. She wasn’t a redhead at first; she used to have black hair.”

But Macchio explains that from the start; “Stan played it with that Cold War spy mystique and he made her work. She is still very much an outsider because she is a Russian, she was a Soviet agent and she gave up on that and came over to our side, but at the same time I still think she had her love of Mother Russia.”

“Black Widow seemed like an obvious character that we wanted to introduce in the world somehow,” says Jeremy Latcham. “There was something early on in development that we liked the idea she was Russian and Ivan Vanko was Russian. Scarlett [Johansson] is an awesome actress who is beautiful and was willing to jump into it with a hundred percent devotion. She spent countless hours with the stunt guys training, learning how to flip and kick and jump and punch and do the whole thing.”

But the style of fighting is unusual for either the comics or the movies. “We combined a lot of different fighting styles,” says Jon Favreau, “and the biggest one was Lucha Libre. Which seemed silly to me when they first mentioned that they thought this Mexican wrestling style of fighting would be good. But when you see the acrobatic moves and the flips and the turns and the holds, when you see a woman doing it in the Black Widow costume—and it’s not a guy in a sequined cape—and she moves like a cat, there’s a freshness to it. And it really felt right.”





Latcham: "We were shooting the house fight [scene], and [Scarlett Johansson] showed up for her costume test. She'd put it on, she wanted us to see it. And here she came, down to the set in this early Black Widow costume. She was in the costume and her hair was pulled back in a ponytail and we're in

the middle of shooting another scene, we have all these extras on set, everything's working against her—and she walked in and everyone's jaw dropped. I've never seen grips and electricians put together something so quickly cause they wanted to get her in front of the camera. It was a really cool moment on the set."



Mary Zophres—Costume Designer: “[Johansson] is built like a comic book, like a rendering from a comic book. She’s the perfect Black Widow, because she looks like the comic book is drawn. I looked at every visual reference for Black Widow and talked to

the producers and we did a few renderings and, once it became Scarlett, it became clear—because I’ve also worked with Scarlett twice before—I can tell what’s going to look good on her.”

Costumes designed by Mary Zophres.

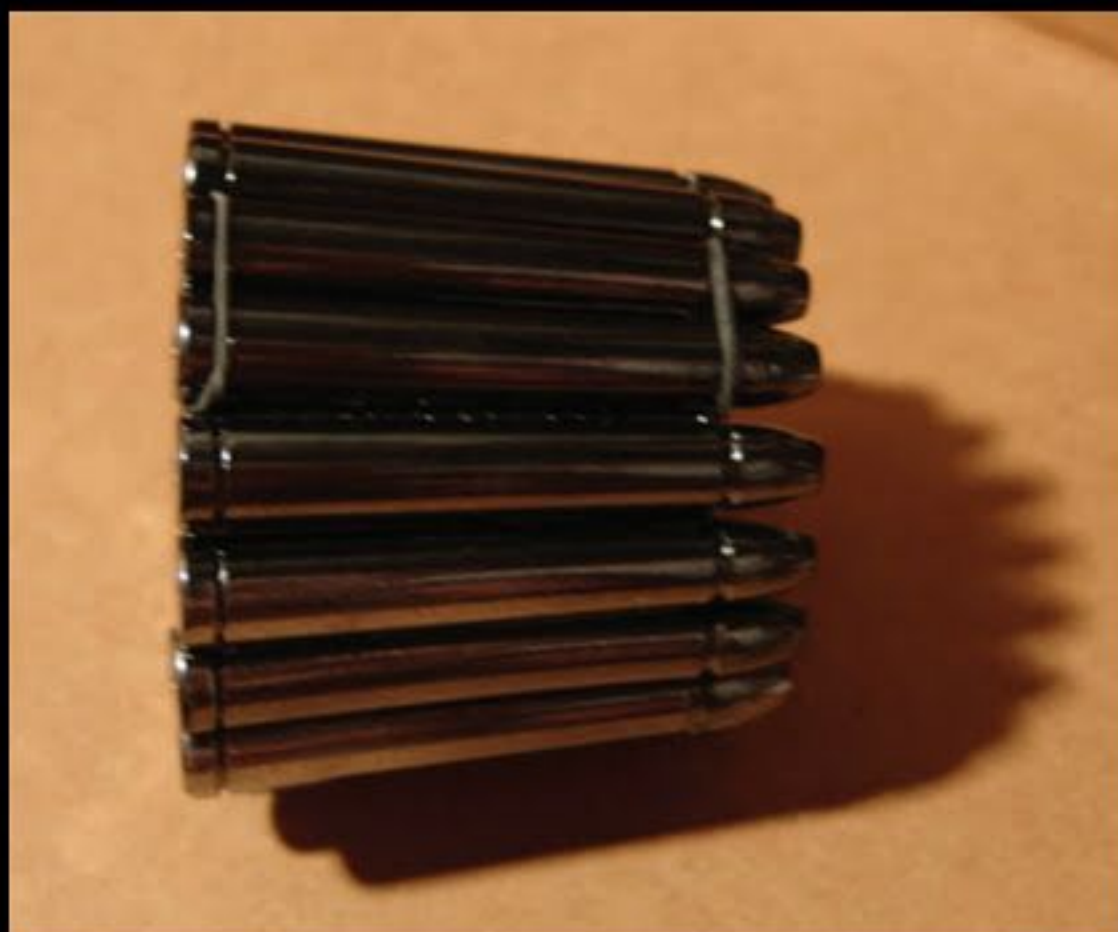


Latcham: "Mary Zophres, our costume designer, did a really cool job of putting together a super hero, one-piece, skintight uniform that didn't feel cliché. And that was really important. It's not going to be black latex, it's not going to be black leather, it's not going to look like every other version of every other black super heroine costume that's existed on film. How do we get around that?"



Zophres: "We did a rendering with her in the outfit, and that was done on a computer. The illustration got the approval, then it was a matter of trying to find the fabric that was going to work and, everyone was teasing, 'What did you make that out of?' And I said it's from NASA, but it's really not. It's a technique that was introduced to me by my supervisors on this, because they've done a couple other movies with super heroes. You take a four way stretch, like a lycra that would look like a football pair of pants, and then you screen over it. You want a four-way stretch, so she can actually move in it."





Zophres: "All the accessories, we dealt with them with great attention to detail, making sure they were right. But it's a minimalist costume, as opposed to a lot of stuff going on. There's just very simple details that draw your eye to the places that you want to be drawn to with Scarlett. It was very intuitive."



Originally, Zophres and her crew constructed a belt emulating the look of the comic book Black Widow's, complete with hourglass symbol. This was ultimately jettisoned—the filmmakers felt it didn't make sense that a deadly S.H.I.E.L.D. agent would wear a decorative belt—and a more real-world utility belt was used.

Zophres: "I had made the holster, but I had made it for right-handed and she's left-handed, or vice versa. So we had to make a new holster, and that was a little scary because that's molded, but we did that in like a week."

NICK FURY



"There was something that was quintessentially Marvel about what Stan [Lee] and Jack [Kirby] did," says Ralph Macchio of Nick Fury. Fury was introduced as the leader of a ragtag, over-the-top World War II squad in *Sgt. Fury and His Howling Commandos* #1 (May 1963). But it was only a few months later that Fury showed up in the present day. "They took a guy from World War II," Macchio continues, "upgraded him, updated him, made him a CIA agent, but then they put him in charge of this globe-girdling

organization in S.H.I.E.L.D. And he was not the suave, debonair, James Bond type, or even the M type who would run things. He was still a hard-bitten, rough-around-the-edges character."

Writer/artist Jim Steranko gave Fury a makeover in the late 1960s, increasing the character's sophistication. Initially, the present-day Fury was simply a WWII vet—no older than Jack Kirby, who also served in the war. But as time continued, and WWII faded further into the past, the aging spy was revealed to be maintaining his youth chemically, with the "Infinity Formula."

"I think the way Nick has grown over the years," recalls Macchio, "is that he has gotten into the games of death and deceit and now himself has become quite a schemer and manuverer, which I don't think he was in the beginning." Today, Fury has adapted to the machinations of the spy world and is a major player in the Marvel Universe.

When Marvel launched revamped versions of some of its characters in the early 21st century, with the "Ultimate" line of comics, Fury soon became the leader of the Avengers analogue, *The Ultimates*, in the eponymous series by Mark Millar and Bryan Hitch.



Though the African-American Ultimate Fury first appeared in *Ultimate Marvel Team-Up* #5, by Brian Michael Bendis and Mike Allred, it was in *Ultimates* that he really came into his own.

When it came time to cast the leader of S.H.I.E.L.D. (Strategic Homeland Intervention, Enforcement, and Logistics Division) in the films for an after-credits sequence of *Iron Man*, Jeremy Latcham calls the decision to go with Samuel L. Jackson "an obvious choice. We thought fans would go crazy if Sam Jackson showed up with an eye patch and he looked so much like the character from the comic books."



Production still



Favreau: "Sam Jackson has tremendous screen presence. Just the idea that we stuck him in the first one was a bit of a lark, and now you know, much like when we said 'I am Iron Man', some decisions that were made flippantly in the first one ended up determining our whole path in the second. We wanted his energy to be that of like a grizzled, AA sponsor who has sort of been there and was going to confront him with the truth about his dad, who clearly Tony has got a conflicted memory and relationship with."



Zophres: "We had three or four different ways to go with Nick, but when they finally figured out where he was going to be in the movie, Jon [Favreau] said he should be in the leather jacket. Because we had a suit, just very straightforward, like an Armani

suit. We had a black, shorter coat, like a suit coat without leather with a straightforward black trouser, black turtleneck and then we had the other leather coat."



Zophres: "If you look at old renderings of Nick Fury, he's in a tight getup—chest straps and stuff. And when Nick Fury became Sam Jackson, it was a whole different look. I don't think anyone would ever dream of putting Sam in that spandex-y kind of thing."

Zophres: "The patch was excruciating to get right. On the first [Iron Man movie] they made one, but it was different. We didn't use the same one. You have to get one that's smooth, and we don't want any stitching. The strap had to be leather. At first we had to tie, and then we decided to make it a buckle. But it was this shape that you needed to show the scars, but cover his eye."





Production still



Zophres: "My tailor made the leather coat. He did a really nice job cutting, that's a nice silhouette on that coat. It's got a broad shoulder, it has like a fitted waist and kind of a flare. It's not too Matrix-y, but it's comic book-y."

CHAPTER THREE:

ARMORED ENEMIES

A hero is only as good as his villains...isn't he? Like many of Marvel's heroes, Iron Man's biggest demons have often been internal—from Tony Stark's heart problems to his alcoholism, the comic book version of the character has often had more memorable moments fighting with himself or his friends, than grand archenemies.

The makers of Iron Man 2 were only too aware of this potential pitfall. "Iron Man does not have the deepest bench when it comes to villains," Co-Producer Jeremy Latcham says by way of a sports analogy. "Tony Stark does not necessarily have this iconic, obvious villain that feels convincing. The Mandarin's the closest thing you get." But the mystically powered Mandarin didn't seem to be a good fit for the more technologically oriented film.

Latcham continues, "In prep we had a giant wall with all the great villains from Iron Man's world hung on it, and there was not a villain that jumped out a hundred percent as this is 'the guy.' But we started

looking at Crimson Dynamo, who had this backstory that had some intrigue. But in the first film, Tony Stark fought a guy in a metal suit and we thought, 'We don't really want him to fight another guy in a metal suit again.' So we started looking at the Crimson Dynamo backstory and kind of playing with some other characters, and we really liked Whiplash."

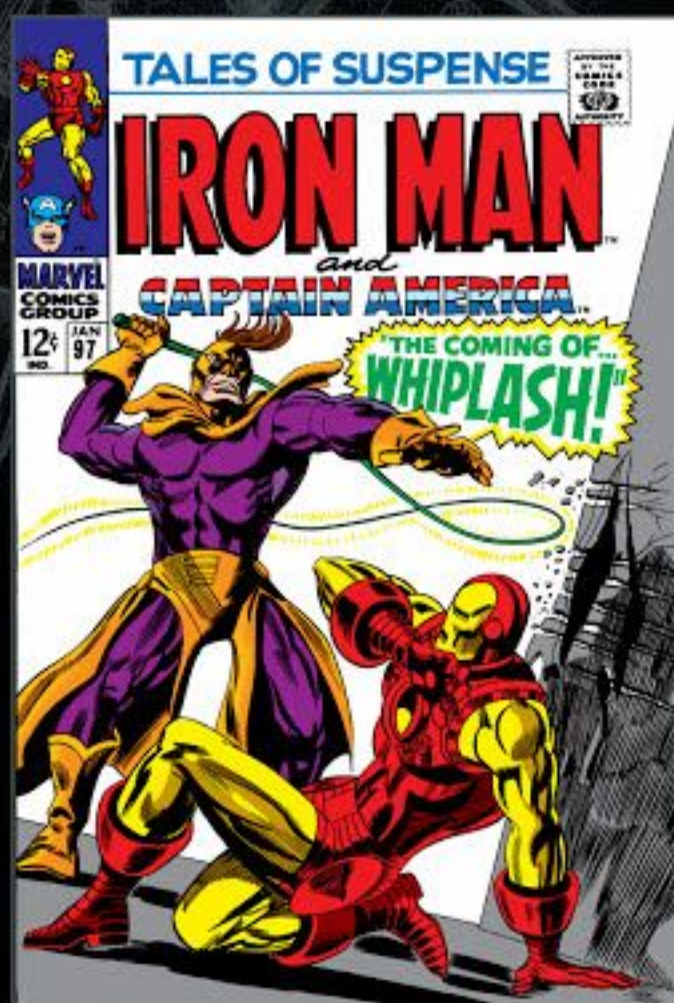
Finally, another piece fell into place. "One of the things we really wanted to play with was this theme of 'legacy,' and really play with Tony's father," says Latcham. "In the first film, Tony said, 'There's a couple of things I would have asked my dad if I had the chance.' We really wanted Tony to explore his dad. And we thought it would be cool if his dad was not entirely the black-and-white version of the best character in the world, but his dad probably was involved in some heavy stuff back in the day."

As the history of Howard Stark merged with the backstory of Whiplash, the story took form.





WHIPLASH



The original conception of Whiplash, when he first appeared in a 1967 issue of Tales of Suspense by Stan Lee and Gene Colan, was quite different from what appears in Iron Man 2. "When he was introduced," says Tom Brevoort, "Whiplash was an assassin working for the Maggia—it's the Mafia, but for super heroes. Tony's cousin had racked up a bunch of gambling debts and they were going to use him to get inside of Stark Industries and make off with stuff. Whiplash was their enforcer. He was a guy in a super hero costume with a big stainless steel whip. He could shatter steel with it, but he wasn't really a super-high-tech villain."

About five years earlier, another character was introduced—the Soviet counterpart of Iron Man, the Crimson Dynamo. "Crimson Dynamo was the first of the mirror-image Iron Man characters," says Brevoort, referring to the tendency of Iron Man to come up against other armored foes. As that first story begins. "[Soviet Premier] Khrushchev is meeting with Anton Vanko, who's put the suit together, and he's going to go to the West and topple Iron Man."

"Back when the books were written," says Jon Favreau, "the Soviet Union was the big threat, and that dissipated. But now, whom we have friction with



Gene Colan (top left), Ivan Gomez Montero (bottom left), Brandon Peterson (top right), Bob Layton (bottom right).

on the world stage seems to be coming back around to the old favorites from the comics. We wanted to reinvent the guy, but there was something interesting and cool and retro about having a Russian. And Mickey Rourke had spent some time there and was intrigued by the idea. You get the sense that the criminals that come out of Russia are a little more hard-boiled than the softer criminals from the United States. So, it added a layer of ferocity to the guy."

"So we kind of started taking the backstory from Crimson Dynamo," says Jeremy Latcham, "and the idea of this Whiplash character, and kind of melding them together in a way that hopefully feels like we're telling a cool, new story that you haven't seen before."



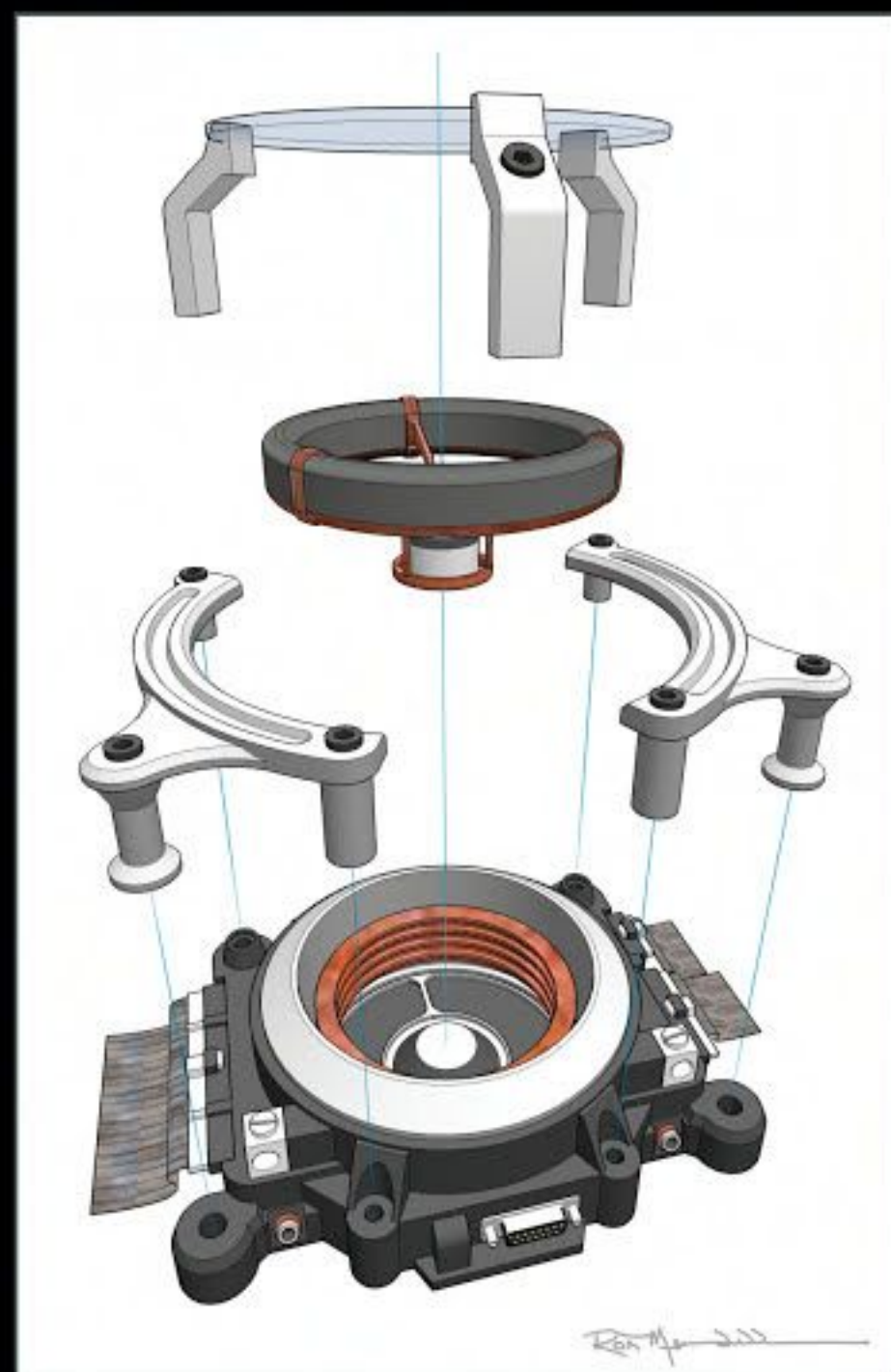
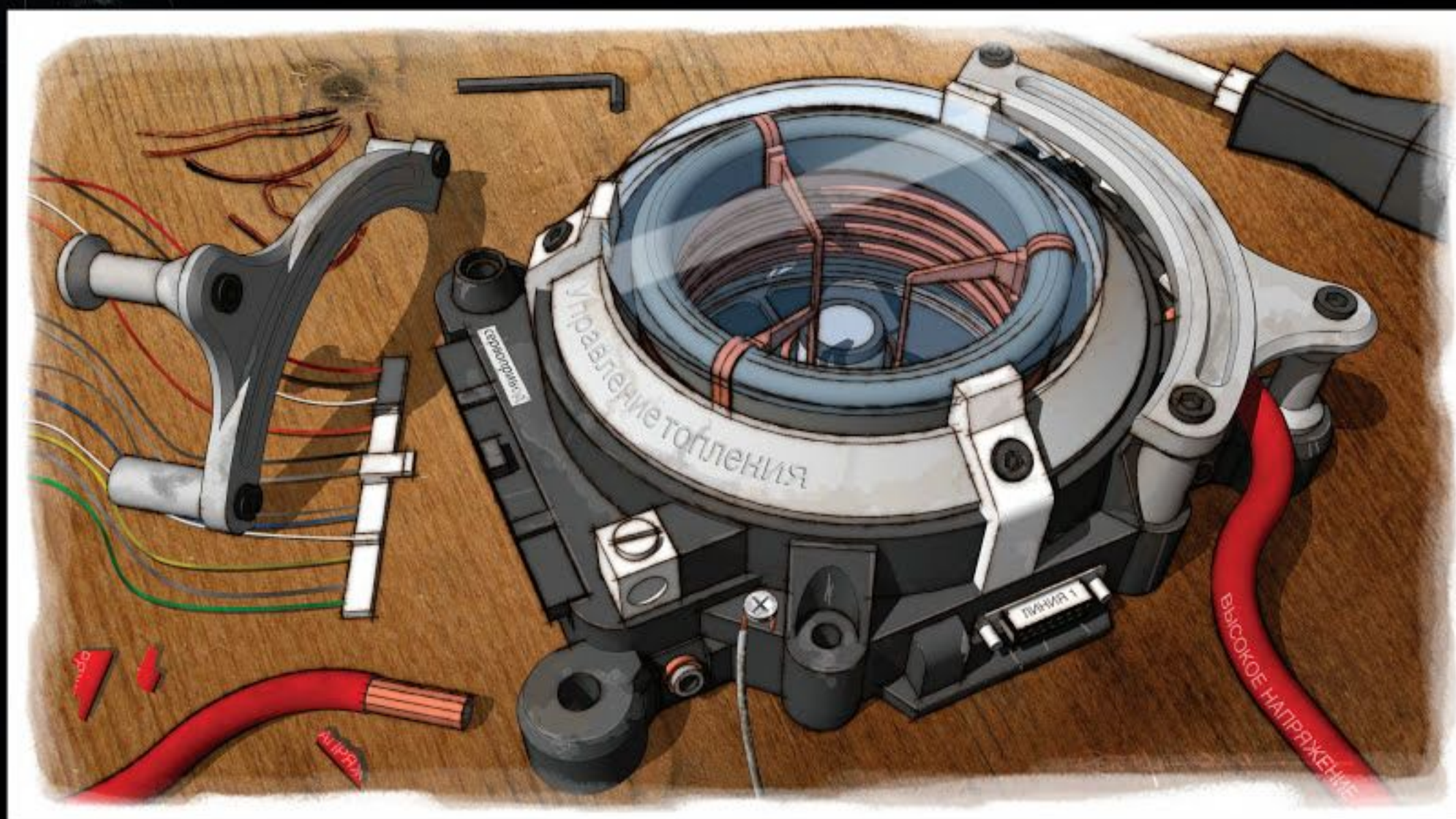
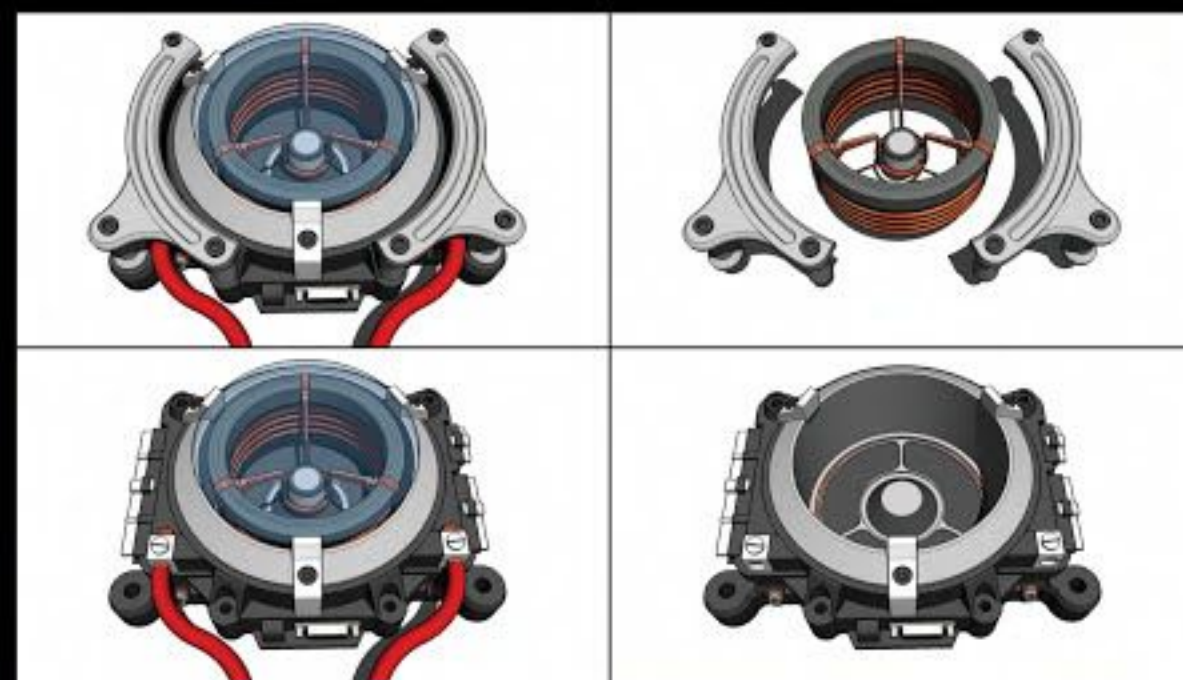
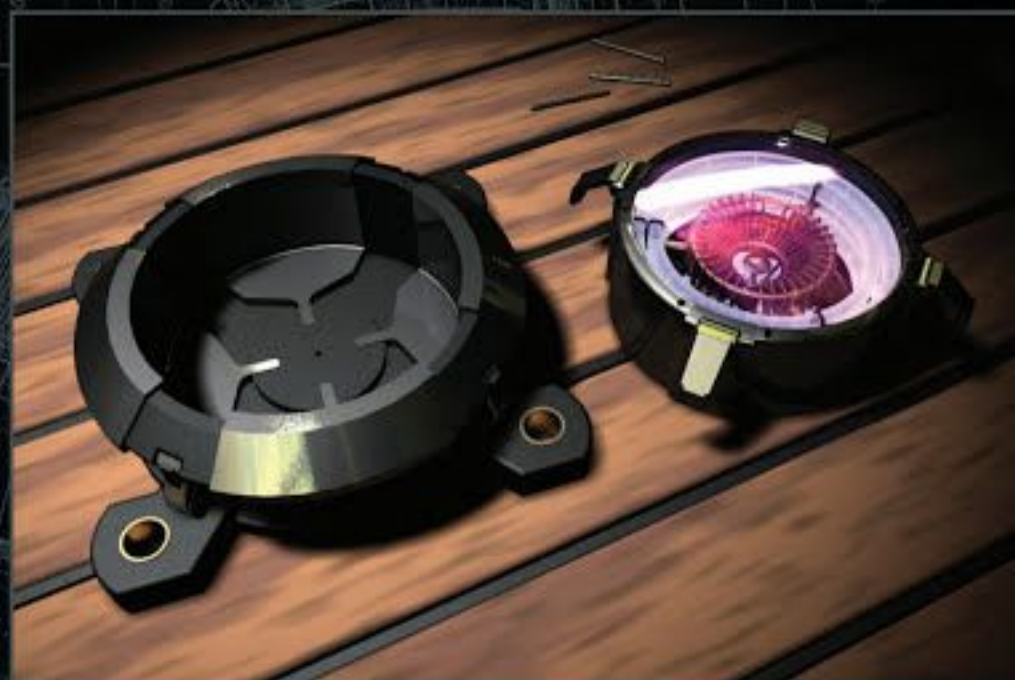
In Iron Man #146, Whiplash was rechristened as Blacklash—now in the employ of the evil financier Justin Hammer. "Blacklash was like Whiplash, but with a black costume," elaborates Brevoort. "Much like Iron Man would get a new coat of paint, new suit, the notion was let's make this guy seem like a credible threat, let's make him more dangerous, let's give him some more capabilities."

Iron Man 2's Ivan Vanko likewise goes through his own transformation, courtesy of Justin Hammer—but this time, the power-up is much more than cosmetic.

And more importantly, this time, with this Whiplash, the vendetta against Tony Stark is personal.

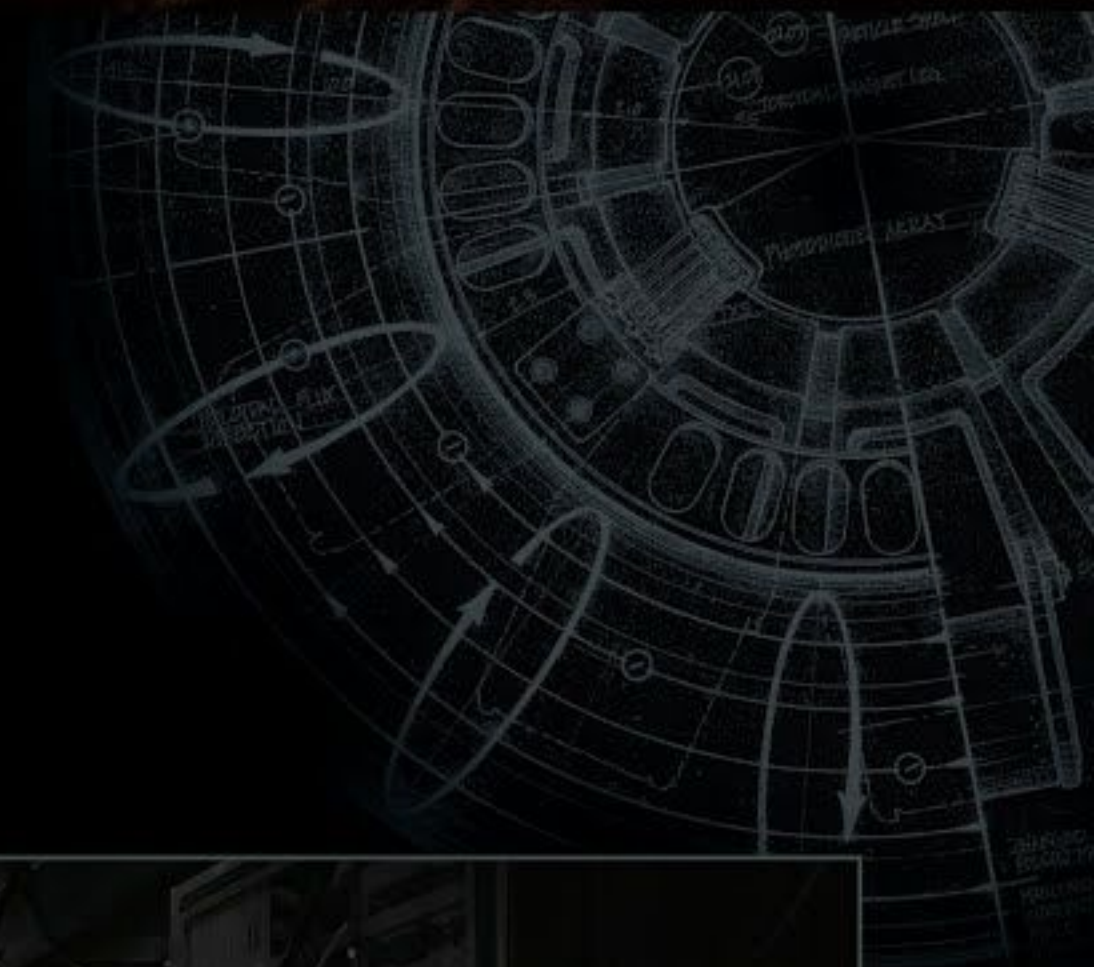


Mahan: "The Marvel team and the production team had done a lot of designs, prior to Mickey Rourke. Obviously, when you throw Mickey Rourke's name around, the whole team sort of senses something a little bit different and brings in a unique approach. It's written as a down-and-out kind of underdog guy. Mickey's got that in his blood, for sure. He's like Robert Downey, where Robert's not passive, he doesn't just sit back and just say his lines. He thinks about the stuff, he influences how you make stuff."



Meinerding: "We started from a place that was very close to where we started with Tony in the first movie, to say, 'What if this stuff is actually like the RT, it's implanted in him.' And from there, Jon [Favreau] sort of gravitated towards that, but it did appear a little gross. And you

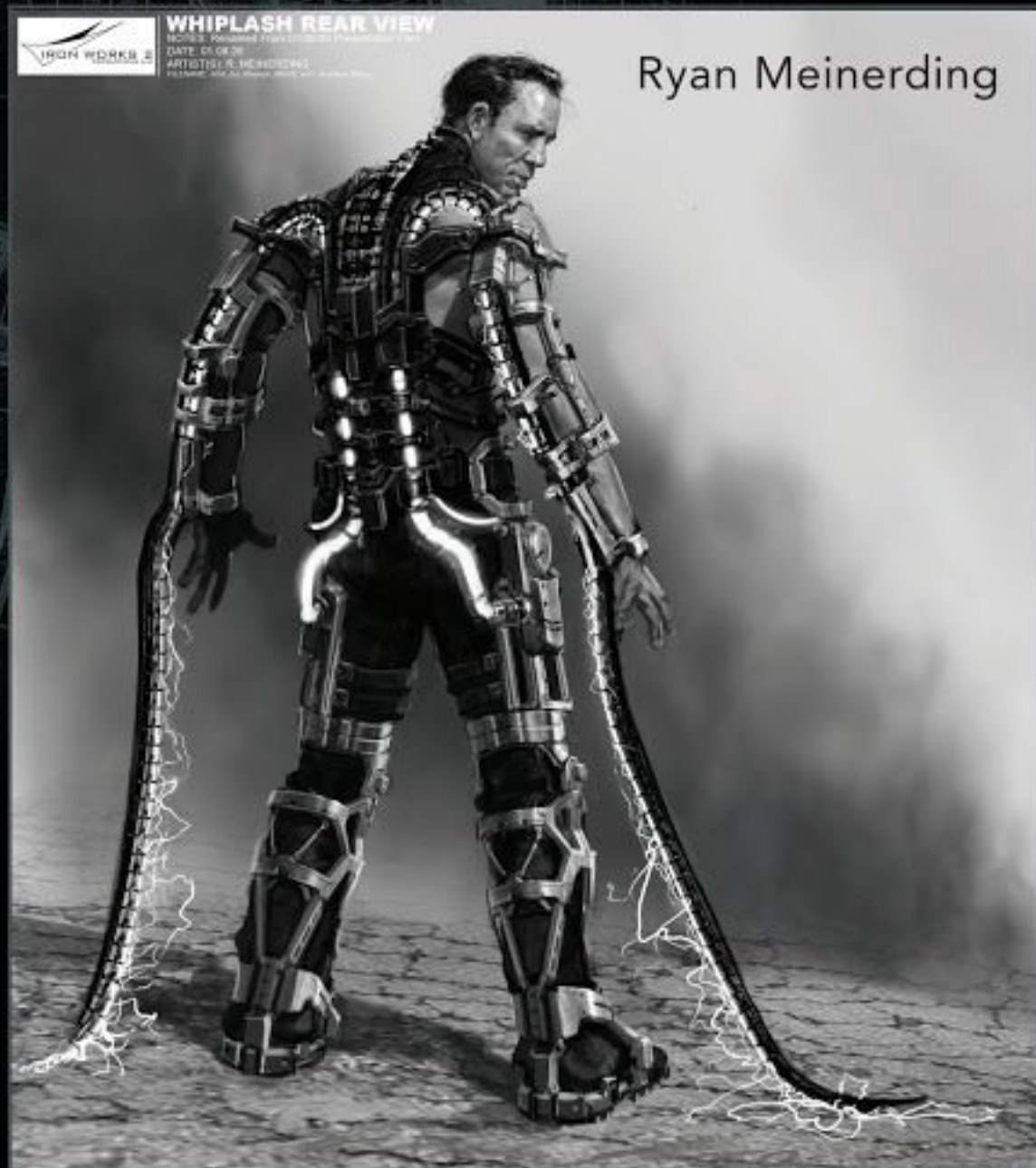
know, performing surgery on himself is a little bit weird, so from there we went to more of an exoskeletal design, so it would be almost like a suit. But only the mechanical drive train and not so much shielding. And that's kind of what the suit ended up being."







Jeremy Latcham—Co-Producer: “Ryan Meinerding, who is one of the most talented concept artists in the entire industry, we thought he could do something cool with Whiplash. So let’s take this and do something new, and how do we make it feel of the Iron Man world? I think the idea of going to the same artist that designed the Mark I to design Whiplash—you understand conceptually how they kind of make sense in our world.”



Latcham: "The thing that got Mickey involved in the movie, and got him really jazzed about it, was a piece of Ryan's concept art. Jon and Kevin met Mickey Rourke with two pieces of concept art and said, 'We want you to play this guy.' When Mickey saw it, he saw the tattoos and he saw the straps and he saw how real it looked, and he thought, 'That's cool,' and I think that Ryan's artwork was really instrumental in making that whole thing happen."

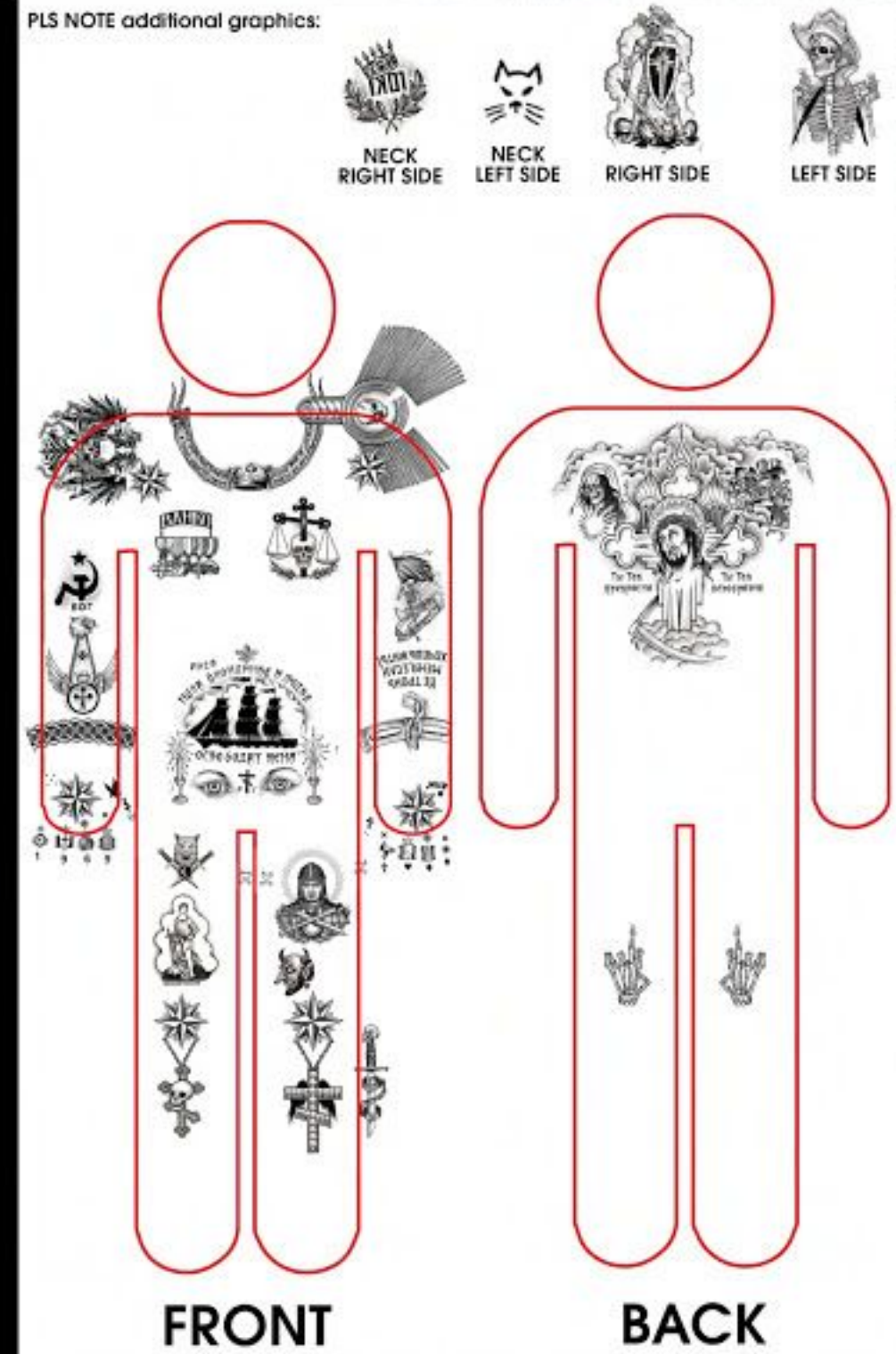
Meinerding: "When we found out it was going to be Mickey, it added a lot to the design and I ended up doing a sketch of him as that character and I think it added a whole new, gritty, dark dimension to it that's great. "



Ryan Meinerding



PLS NOTE additional graphics:



This chart from the makeup department maps out the tattoos that cover Ivan's body. Mickey Rourke was instrumental in deciding on the particular tattoos, doing research on real Russian prison tattoos.

Meinerding: "In a movie like Iron Man, so much of the face is covered. Usually [the actor] doesn't affect it that much. In a case like Whiplash, however, since it is going to be him in this, it's a huge factor. I think that we ended up finding an aesthetic that was a little bit close to what the Mark I was, and that whole gritty sort of realism is still carried through, not in Iron Man in this movie—but with Whiplash."

THE ART OF IRON MAN 2



Mahan: "That was the first time that Jon had seen what we were building, the first time we met Mickey, the first time that Mickey had the thing on, so it's like you're jumping right into the frying pan. As you're driving to these places it's either going to be great or it's going to be a horrible day. I think you have to include the actors because they're the guys that bring the stuff to life. Our perspective is this is your character. The more that they feel that they belong to that thing, the better."



Legacy Effects



Legacy Effects' Whiplash armor was achieved almost entirely as a practical costume worn by Mickey Rourke or stuntmen, as can be seen in this photo. Displayed are only some of the many pieces Legacy built to create a convincing villain.

Production still



JUSTIN HAMMER



Justin Hammer first appeared in Iron Man #120, in 1979. Like the purpose-built specialty armor, Hammer was introduced by the classic Iron Man creative team of David Michelinie, Bob Layton, and John Romita Jr. While a character like Crimson Dynamo was the opposite of Iron Man—a super villain in armor—Hammer was a different paradigm: he was the evil opposite of Tony Stark.

"The type of corporate war that would go on between [Stark] and someone like Justin Hammer, I found fascinating," says Marvel Comics Senior Editor—and current Invincible Iron Man editor—Ralph Macchio. "They'd be fighting on so many different levels, because they'd have their tentacles in so many financial institutions and so many organizations and so many corporations. Stark Enterprises was so sprawling, and Hammer Industries was as well, and to have them going at it, to me was very interesting."

That dynamic was quite different

than the sort of relationships most super heroes had with their villains. In many ways, Macchio says he was excited by this dynamic "more so than having another guy in armor or another super villain. This was Tony Stark having to use his smarts, his financial empire, and putting it on the line to fight somebody who's just as deadly as anybody in a costume was."

Jon Favreau sees Hammer as "the fellow who is probably a notch below Tony, but fancies himself Tony Stark. And is definitely competitive with him, as many people on that level are very competitive. Even though they have more money than they know what to do with, they still are haunted at night that there is somebody who is better than them. And so that's Justin Hammer."



ton of reasons why you want him alive and around to kind of pop up later. He took the Mark II and modified it to the War Machine armor, so he's a smart guy. He's just not exactly a good guy."



Iron Man 2 might not be the last we see of Hammer. Jeremy Latcham explains, "We definitely took steps to make sure that Justin Hammer didn't get killed at the end of Iron Man 2 because we're going to want to see him again. He's a compelling guy, he's got a lot to say, he has a relationship with Tony Stark, there's like a



Production still

Favreau: "Justin Hammer is played by Sam Rockwell, who is a wonderful actor who I have worked with since the first time I directed. I've been friends with him for years and he was even somebody, when it didn't look like it was going to be working out with Robert, I was considering to play Tony. So he's somebody who I really always gravitated to, and I knew that I needed somebody who had some chops to play opposite Mickey Rourke, because most of his scenes are with Mickey. And he just does a tremendous job with everything he is in. He's worked with some of the best actors of our generation and the older generation, and he always seems to hold his own and do a nice job."

Nathaniel West





Favreau: "Now that somebody has emerged with [other RT] technology, we realize that maybe darker forces are not as far behind as Tony has assured the public they are. And, of course, Justin Hammer sees this as an opportunity to capitalize on somebody else who has the goods and has the chops, and with his resources and Ivan's talent—together they might be able to challenge Tony Stark."



Early in Iron Man 2, Tony Stark is called before the Senate Armed Services Committee to testify before Senator Stern (played by Garry Shandling). When Stern orders Stark to hand over the Iron Man armor to the government, Stark decides to embarrass Stern—as well as Justin Hammer, who's also testifying—by demonstrating that the rest of the world is decades behind the technology necessary to create Iron Man, and that the government has nothing to worry about.





Tony shows classified video of what the Iron Man 2 filmmakers called "The Feebles"—the would-be Iron Man suits built by foreign countries like Iran, North Korea, Russia, and Venezuela. All the attempts at recreating Tony's suit are spectacular failures.

Latcham: "Early on, we had designs for Feebles from all over the world, and it was a really fun part of the design process. Of course, in the finished film, the Feebles are on screen for about four seconds."



It was important to show a variety of designs in the Feebles, as each armored suit was meant to have been created independently of the others. The Feebles each convey a bit of the personality of their home countries.





Also quite important to the Feeble design is the way in which they fail. The unique design of each would help build an interesting moment as the suits activated—and proved they did not live up to the standards Stark had set.



Pakistan
"feebles"



V-3_SP_P-002

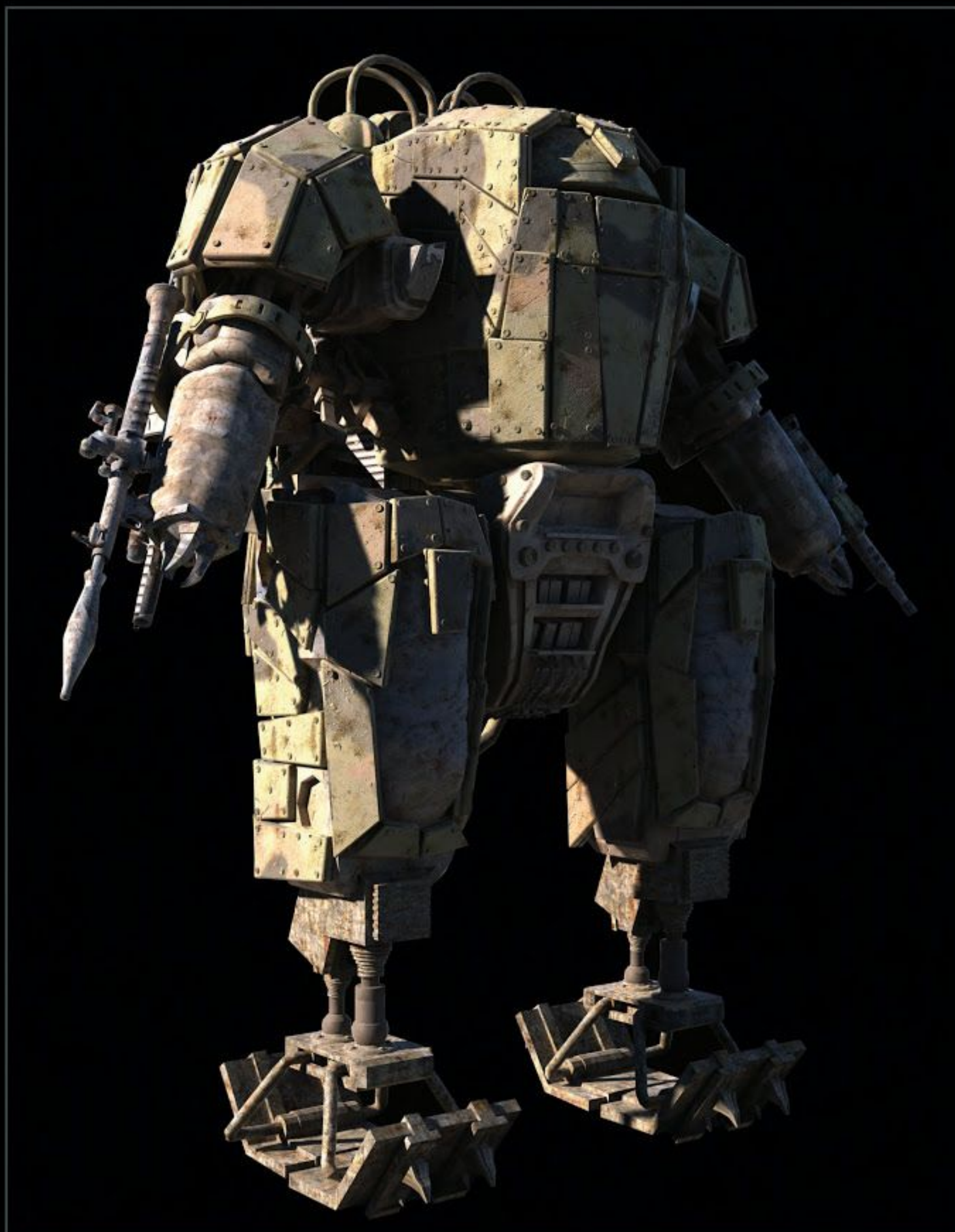
Some of the designs took more of an inspiration from vehicles than others, becoming less humanoid than any of the other armor designs in either Iron Man film.



Iran
"feebles"



V-3_SP_I-001



As production on Iron Man 2 continued, the scene with the Feebles was built around only a small number of failed attempts, but the designs for the others still provide a fascinating glimpse into a world that might have been.

DRONES

Meinerding: "There's five Drone designs. It starts off as the Hammer Feeble—it's the Hammer version of an Iron Man suit. And then it gets retrofitted by Ivan to become the Drones at the end. The versions at the end of the movie are based on the four branches of the American military, so there will be an Army, a Navy, an Air Force, and Marine drone.

"[I was] trying to make it a little bit blockier, exposing a little bit more mechanical bits, because I think the other thing about the Iron Man suit is it's all very self-contained. So trying to make it look like you can see what was driving the things. It seems to be a balance between trying to make it not as slick, because I think that's one of the things the Mark III and hopefully the Mark IV has. It just feels like it's really well designed and really, really tight."

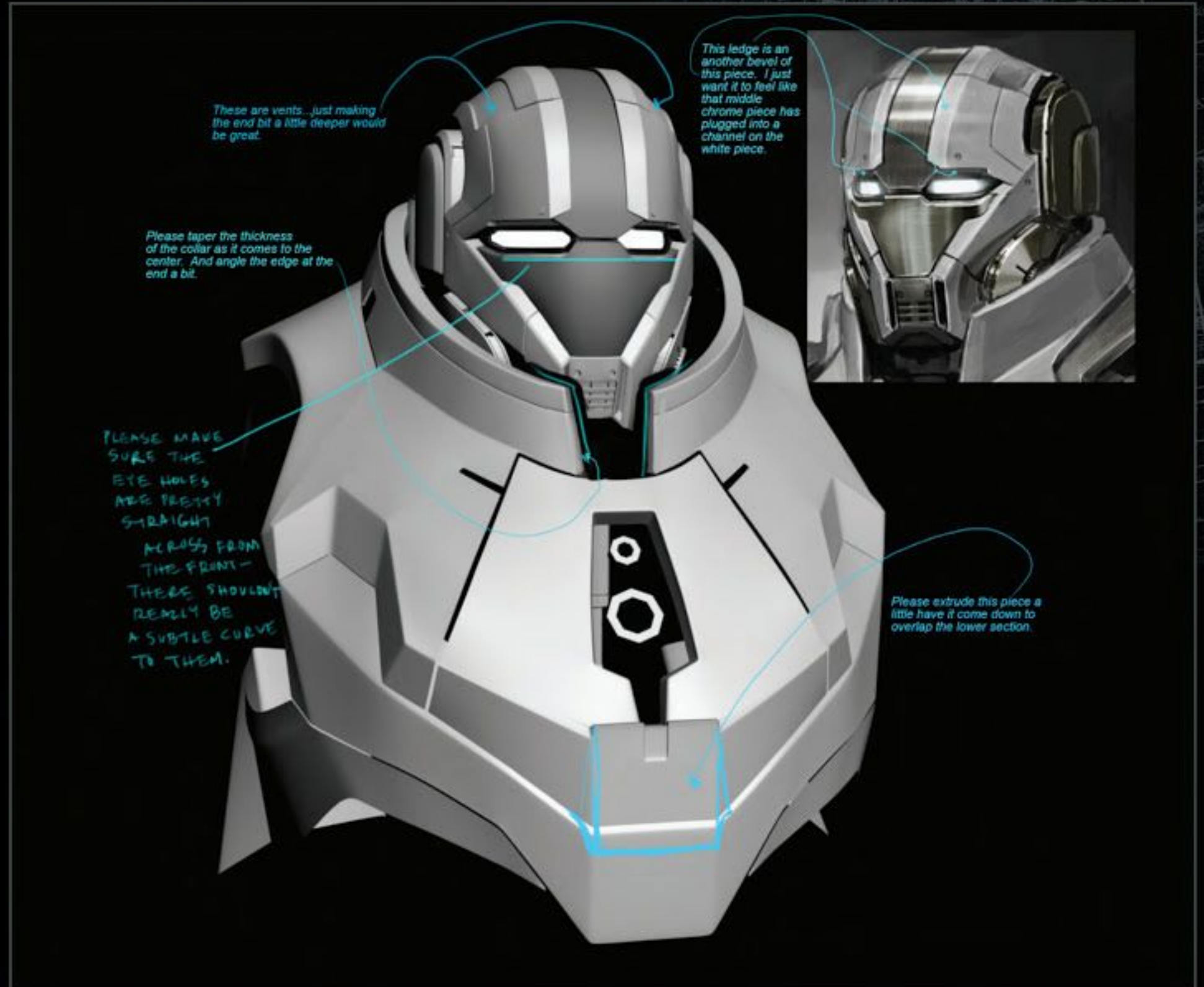
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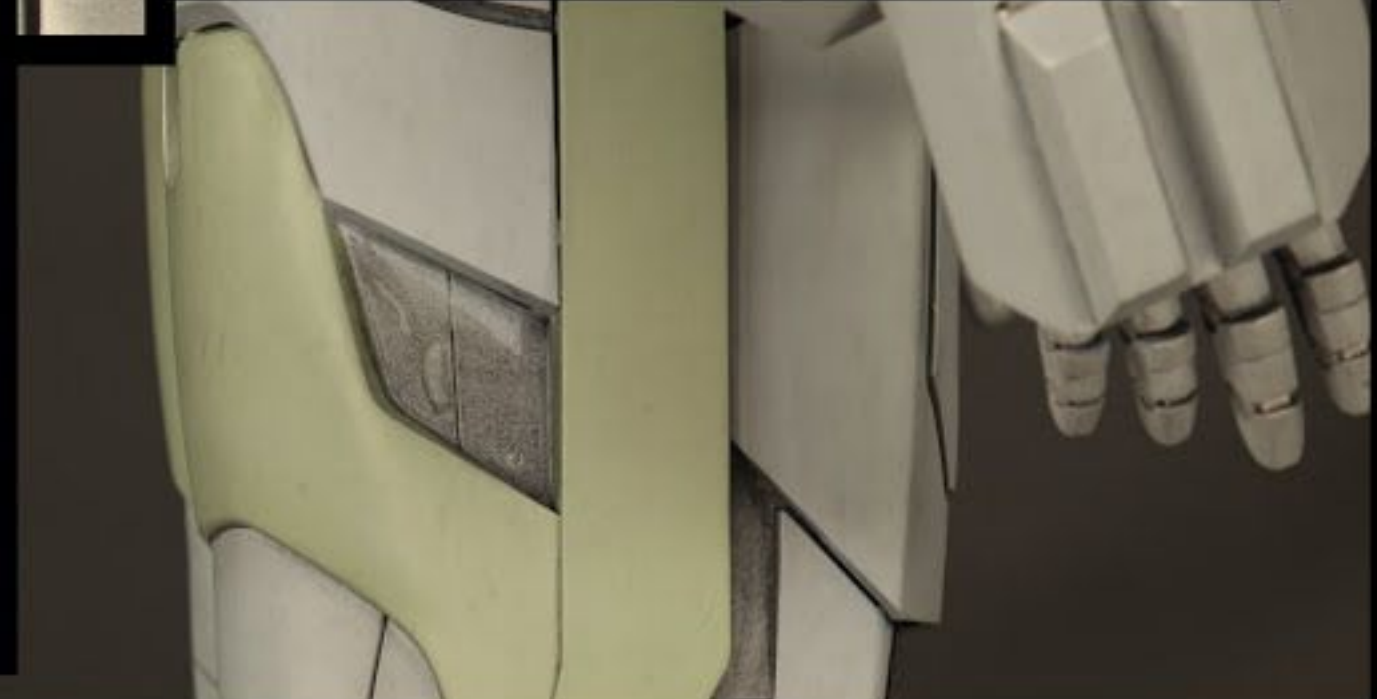
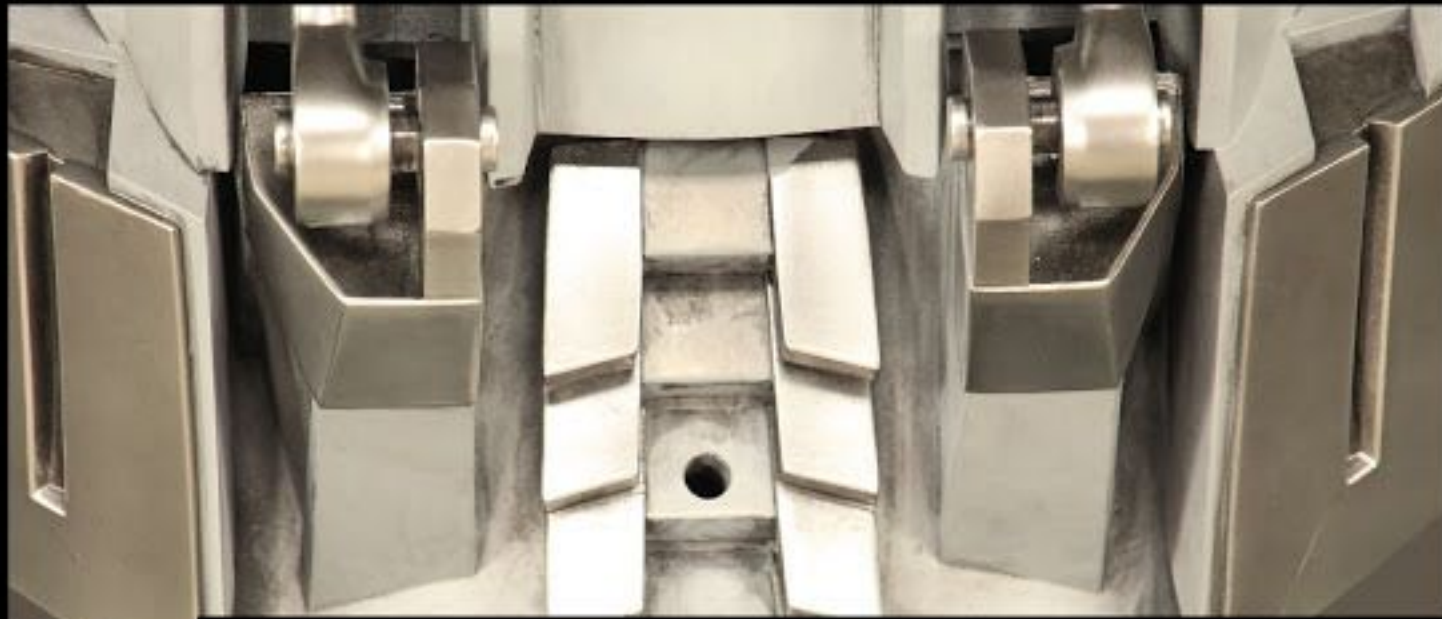
ILM



Alternative Drone Head Designs by Ryan Meinerding



THE ART OF IRON MAN 2





Mahan: "A lot of our stuff is great set dressing, and reference for really great animation. This time around Janek Sirrs is doing the visual effects coordination from all of that end and he's been really great to work with. In many ways the visual effects supervisors of these kinds of films are really who you are working with the most. You have to work as a team, otherwise it's not going to happen."



Meinerding: "We started doing a few early versions of Drones that people were sort of on board, but they weren't sure whether it was going to be a robot or whether it was going to actually look like there should be a guy inside. When the story point came in that it was going to be the Hammer version of Iron Man's suit that Ivan then retrofits to be a Drone, we ended up landing on something that looked a little bit more reasonable."

Adi Granov



Ryan Meinerding



Adi Granov



Riva: "The idea is when you have people inside, it kind of defines what they're going to look like—how thick are the legs and everything else. If you don't have people inside, you can make them much more interesting. Early on, we in the art department—Ryan [Meinerding] and a few other people—decided it should be without people inside, and we just waited for [everyone else] to come around. And finally they did come around, and then we could just go to town on it. Which Ryan did."

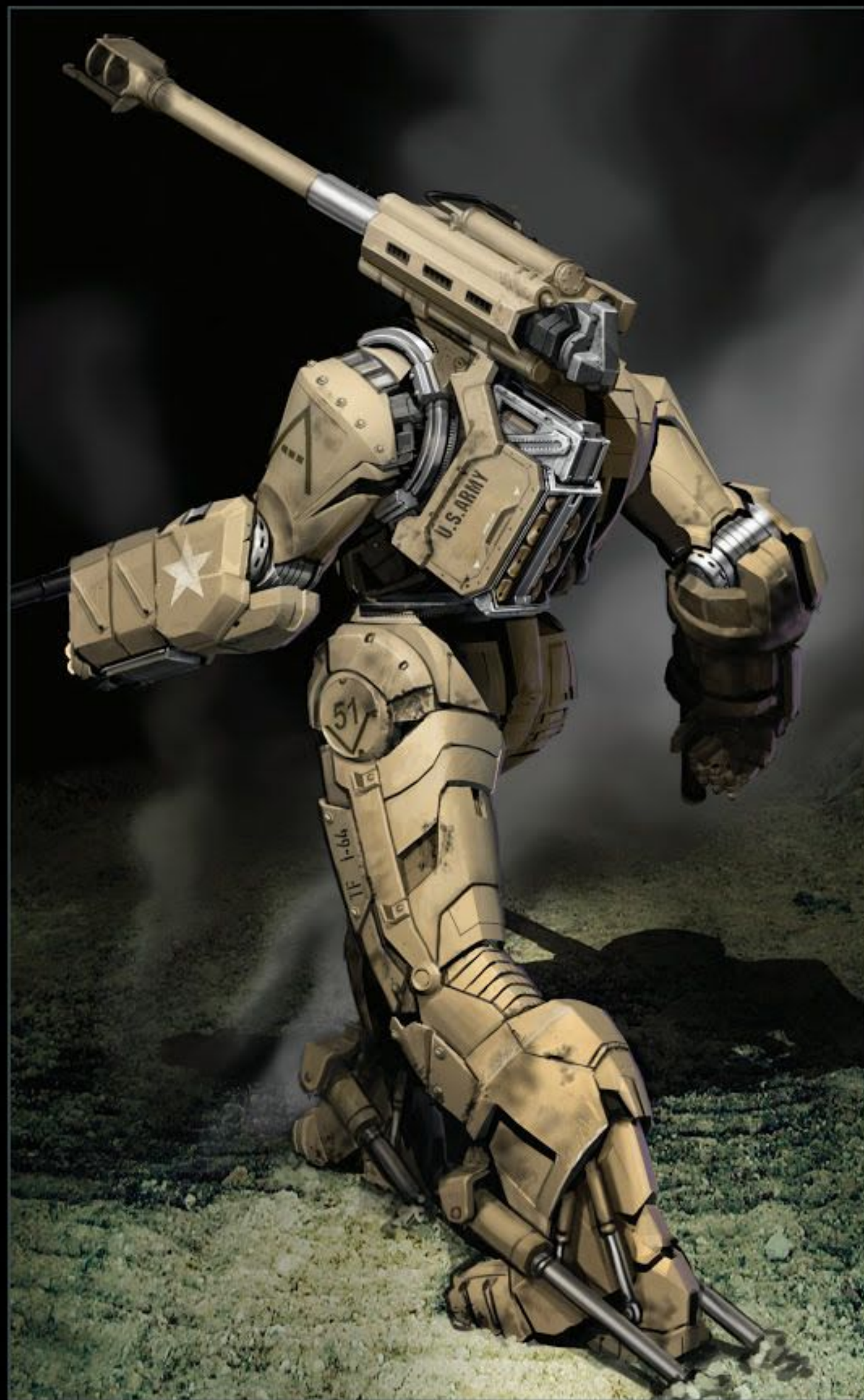
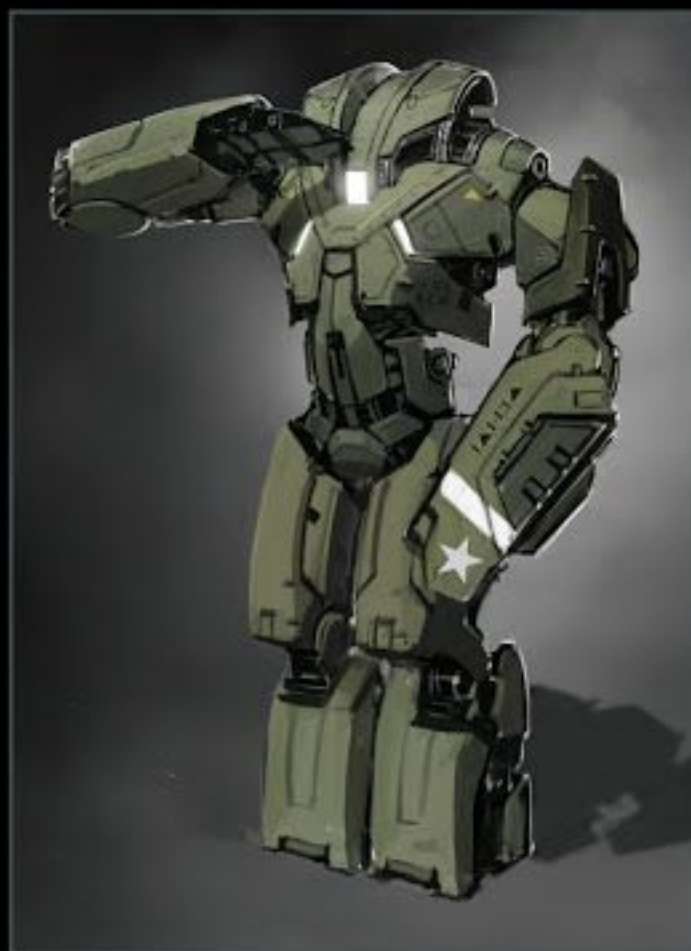


Stephen Platt

ARMY DRONES

Each of the Drone designs would take a strong inspiration from the branch of the military in which it was intended to serve. The Army Drone took the feel of modern infantry, with a variety of weapons designed for both short- and long-range combat.

Riva: "Everybody thinks of them as foot soldiers, but they're also tanks and things like that. So the Army [Drones] have these giant cannons, like the ones that you see on tanks."





Ryan Meinerding (left, middle). Scott May, Bruce Holcomb, Ron Woodall, Natasha Devaud, Carlos Anguiano (right).

NAVY DRONES

Riva: "The Navy was the most difficult one, frankly—because we didn't have any water. There was a giant pool at the [Flushing Meadows fairground] that we incorporated. We talked about having SEAL [Sea, air, land] robots coming out of the water to attack Tony Stark."

In the end, in addition to its color scheme, the Navy Drone took its inspiration from the high-tech elements of a contemporary sea vessel and used the long-range missile systems that are a familiar sight on U.S. Naval ships.



Ryan Meinerding



Navy Drone

NOTES: ROUGH FORM STUDY A

DATE: 05.14.09

ARTIST(S): R. MEINERDING

FILENAME: 0022_Cha_Drones_Navy_042514_v001_FrontView_RM.og



Ryan Meinerding (left). Rene Garcia, Bruce Holcomb, Tim Brakensiek (right).

AIR FORCE DRONES

Riva: "At first pass, it's obvious the Air Force is flying."

The Air Force Drone clearly would have to fly and was further developed to convey a sense of stealth technology, resembling the comic book Iron Man's Stealth Armor.





Ryan Meinerding (left, center). Rene Garcia, Bruce Holcomb, Paul Thuriot, John Goodson, Kalene Dunsmoor, Steve Braggs, Kaori Ogino (right).

Meinerding: "The final design for the head, I was trying to get a little bit more of an Iron Man look because to get that faceplate and the eyes and the mouth to really read as an Iron Man—it just makes the most sense, because we're actually trying to rip it off."



Final Marine Drone



Final Navy Drone

Rene Garcia, John Goodson, Kalene Dunsmoor, Steve Braggs, Paul Thuriot, Kaori Ogino (left).
Rene Garcia, Bruce Holcomb, Tim Brakensiek, Robert Kosai, Steve Braggs (right).



Final Air Force Drone



WHIPLASH MARK II



Aaron McBride

After Ivan Vanko's first encounter with Stark, Ivan makes a deal with Justin Hammer. Not only does Ivan build the Drone legion out of the ashes of the Hammer Feeble, he gives himself a power-up—an even more deadly way of going head-to-head with Iron Man. Using all of his experience and knowledge—and all of Hammer's resources—he builds Whiplash Mark II.



John Giang



Meinerding: "We would talk to the storyboard artists and work with Jon to figure out how much damage he needed to take, because if you set a guy without a suit on versus Iron Man, does it seem like one is weighted? Obviously Iron Man is encased in a suit, even if it's a lesser suit [the Mark V], so it was a tricky balance between trying to understand how much exoskeleton we needed to put on him; how protected he needed to be."



THE ART OF IRON MAN 2

Meinerding: "We had always wanted [the whips] to be RT-powered, so to come up with what that could actually be was a little bit of a challenge. Because the concept of Iron Man blasting people with energy is a different concept than actually having it sort of maintained in a whip form. So they're not actually going to be electricity, they're closer to a laser cutting edge. So they were always technology driven."



Aaron McBride



John Giang



Meinerding: "I did end up trying to cover him and it was sort of like, we want to see him—we want there to be a sense of bravado. And since he was going to be Russian-like, the idea was that he's a stone-cold killer and would show up sort of as a psychopath and not really think to cover his face, almost."

Whiplash
IM2



Aaron McBride



Whiplash
IM2



In one early plan for the climax of the film, rather than adopt a larger, bulkier suit of armor, Vanko would go the opposite direction and create smaller, concealable whips. But as production continued, the idea of a larger-scale fight—and a larger-scale Vanko—took hold.

Aaron McBride



Favreau: "Justin Hammer is driven, through desperation, to reach out to Ivan Vanko after he is incarcerated for attempting to ambush Tony Stark on the track, using his technology—the technology that Hammer knows he himself can't create, but he recognizes the talent in others."

Aaron McBride



Bruce Holcomb, Ron Woodall,
John Walker, and Aaron McBride.



ILM Super Drone Concepts by Bruce Holcomb, Ron Woodall, and Rene Garcia (bottom center).
ILM Super Drone Turntables by Bruce Holcomb, Ron Woodall, and John Walker (bottom right).

CHAPTER FOUR:

SETTING THE STAGE

On a film like *Iron Man 2*, if the sets don't look real, the characters will fall flat. Fortunately, the team led by Production Designer Michael Riva was up to the task. "The fun in designing where I'm going to shoot," says Riva, "whether it's on location or a stage set, is really what you see in your mind. That first pass in the script, or even beat sheet in the case of these pictures, you get a sense of something. Usually, that first take you had is the one you end up with."

But the practical realities are never far from Riva's mind. "You also have to keep in mind production. My job first is to design the look of the picture; the budget is not my first concern. But a close second is the budget, because you can dream all you want—but if they're not going to give you the money, you're not going to be able to build it or use it."

Set decorator Lauri Gaffin is a crucial part of the team. Gaffin says that she and Riva have "worked together on over nine movies;

we've had a great collaboration. He is always very enthusiastic and we do a lot of research together at the beginning of the movie. We do have an incredible shorthand and he gives me tremendous freedom and trusts me to go out in the world and bring back wonderful ideas and he's very open to that. He's open to everyone that way, and that's a really wonderful characteristic of his."

"Usually if it's right," says Riva, "the simplest solution is the best, the most unfussy is the best. You can feel it's right. If you're working too hard to make something work, you've got to change the whole thing."

"This is the number one prerequisite of a successful designer: It's like a puppet show. You're not supposed to see the strings. We're there to service the story, not to highlight what we can do. So, that's distracting. The worst thing you want is a set that's over-decorated, over-designed—unless it serves the story."



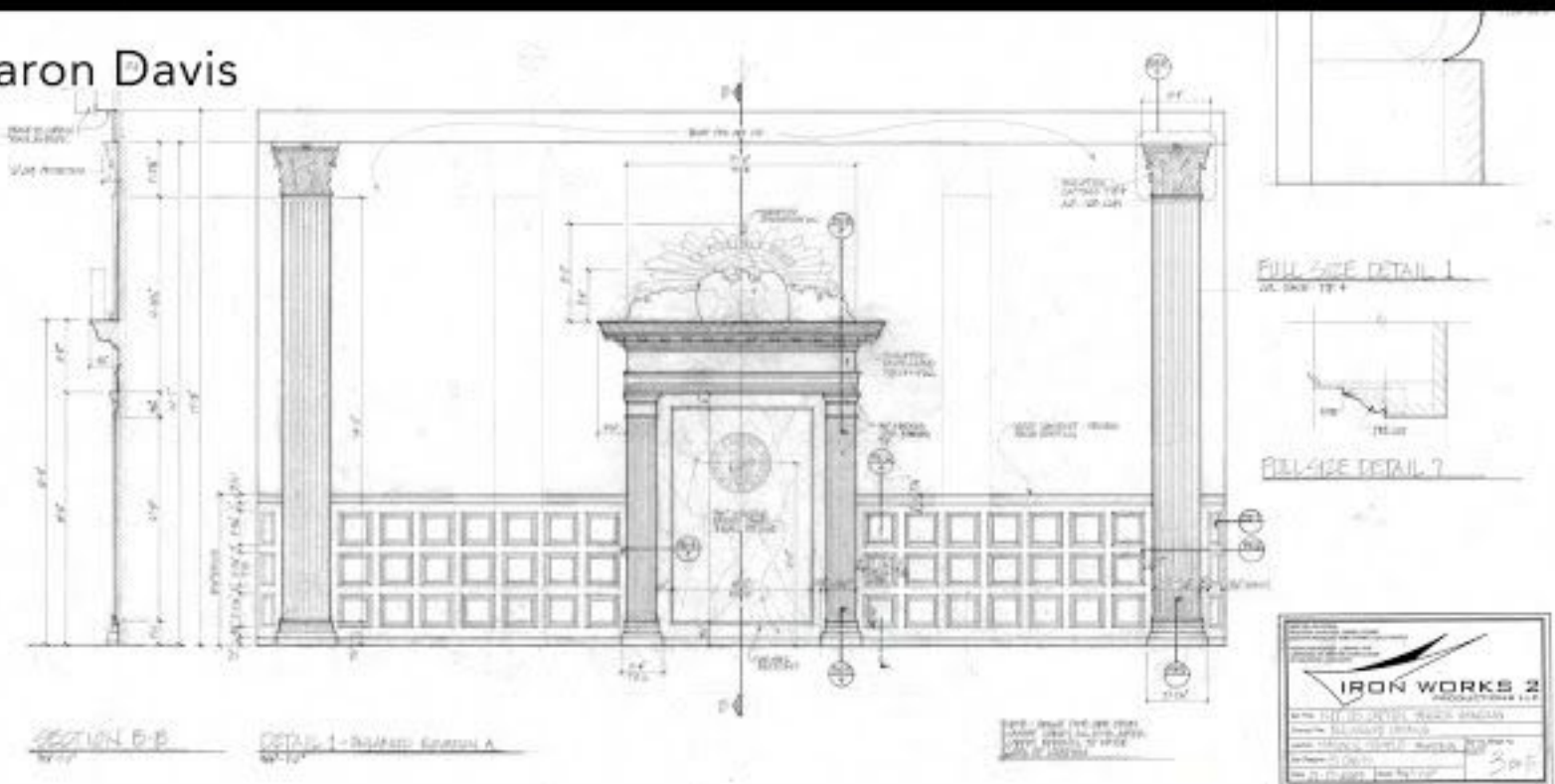
Jonathan Bach



SENATE CHAMBER

When Tony Stark—now refusing to develop weapons—is called before a Senate Committee that wants him to give the U.S. government his designs, he faces not only an implacable group of Senators, but also an imposing edifice.

Sharon Davis



Nathaniel West

Oliver Scholl



Set continuity still



Riva: "Iron Man is essentially about a regular guy who's narcissistic, who learns a lesson very early on and has to redeem himself, and that's a pretty common story so you don't want to surround it with too much gear and gizmos. You can do that, but the primary focus is a real story, so you try to create a real environment around there, so people don't spend a lot of time figuring all that out. They're watching the performer go through an arc."

THE ART OF **IRON MAN 2**

TONY STARK'S MANSION

Jonathan Bach

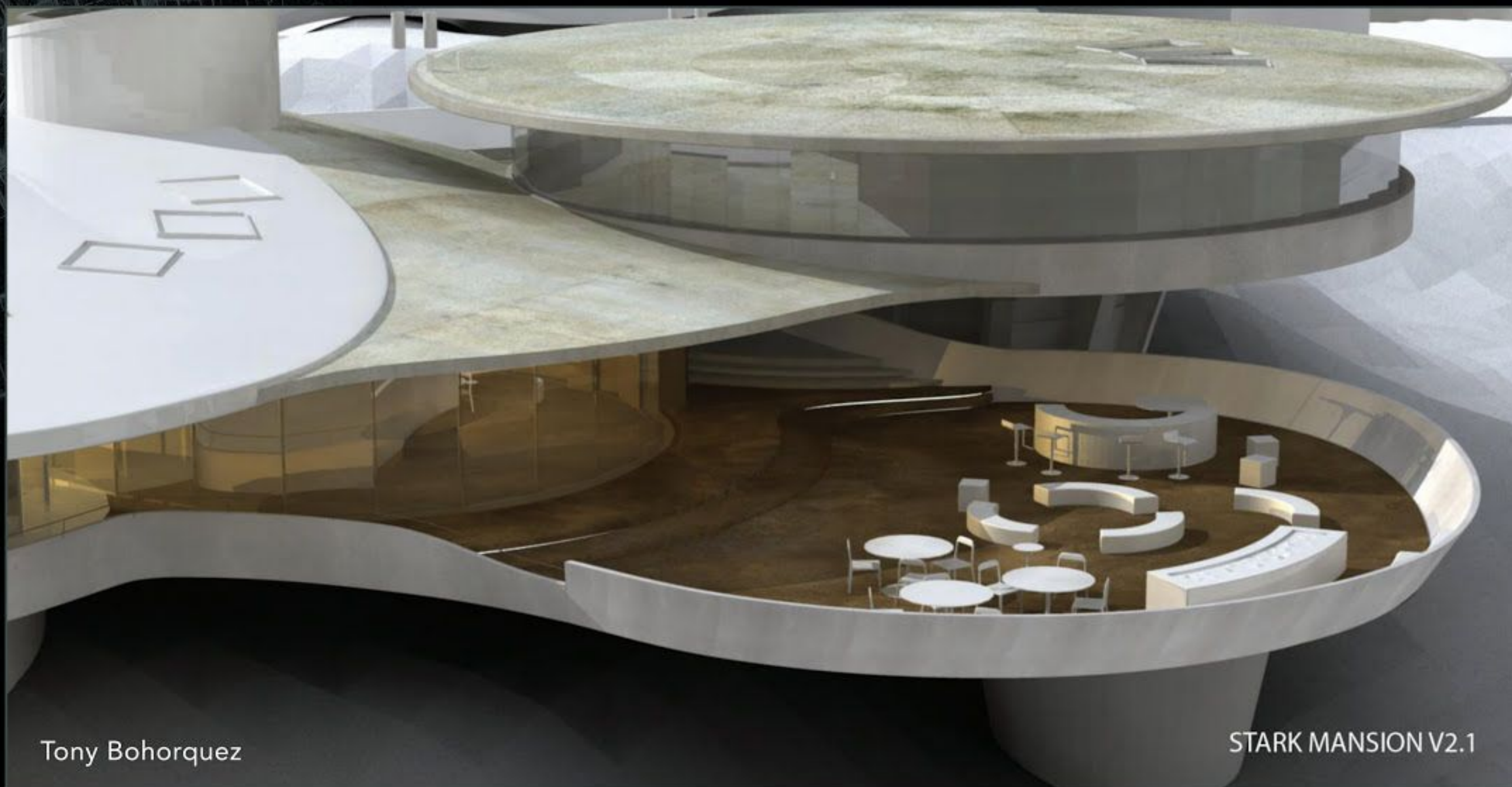




Lour' Claffin—Set Decorator. "Tony Stark is a bllllionalre, and we wanted to reflect his surroundings with that. Look where he lives. This says, 'I'm a millionaire and beautiful' It was all about beauty and peace and creating that environment for him. He is a sophisticated, modern man and he has modern concerns, and he wanted to live in a modern home. So that's the home that Michael designed."



Final Air Force Drone



Riva: "On the first movie we had the living room and we had the garage and we had a bedroom, and we were confined by the stages we were shooting on—we couldn't quite get it the right size. This time there was a beat sheet that said, 'There's a big fight in the house.' That's all it said. So, we tried to figure out, okay, where does the fight happen and where does it develop? We designed the entire house this time and proceeded to get it ready to be blown up and explode, to be torn about by these guys fighting."





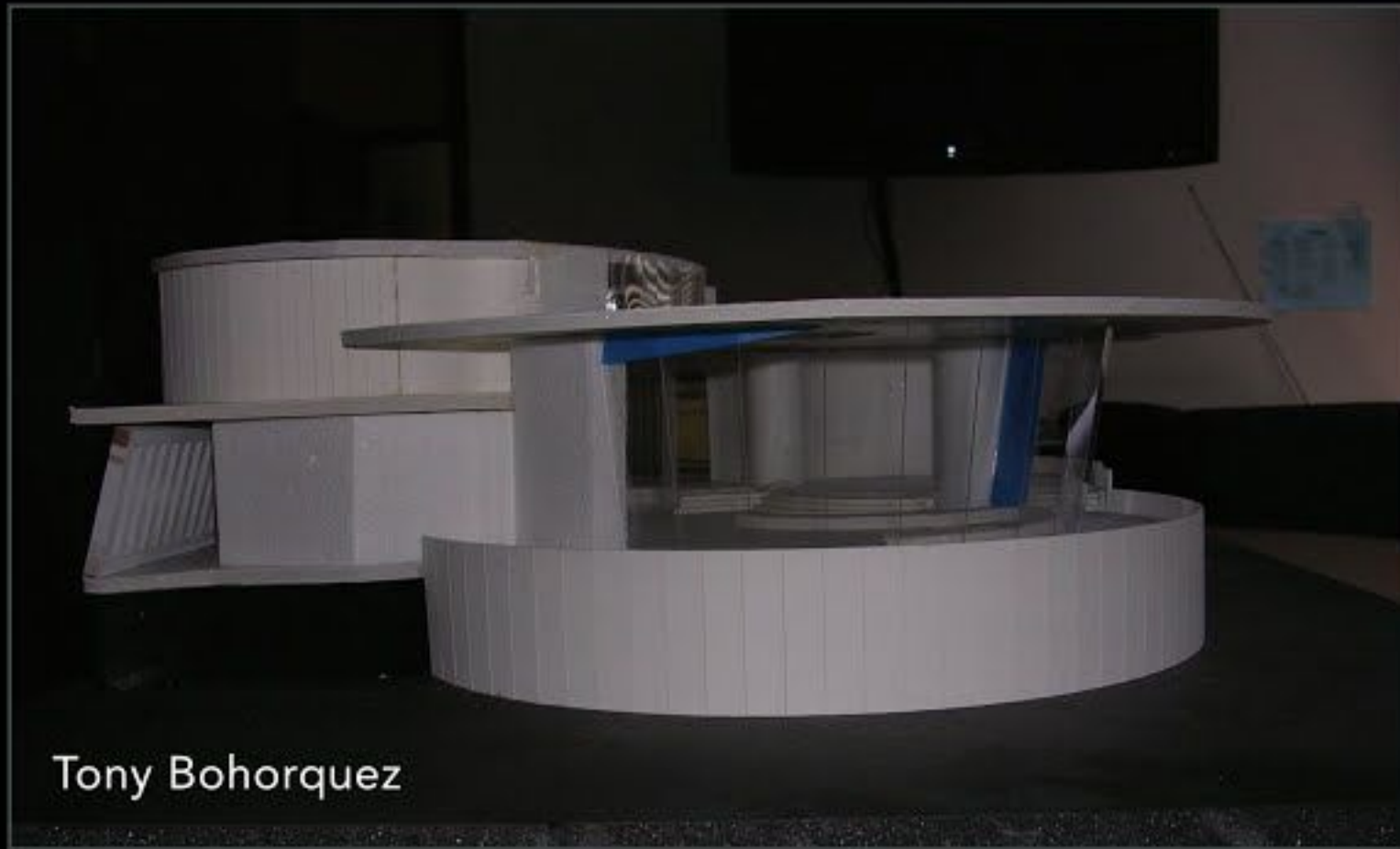
Nathaniel West



Nathaniel West

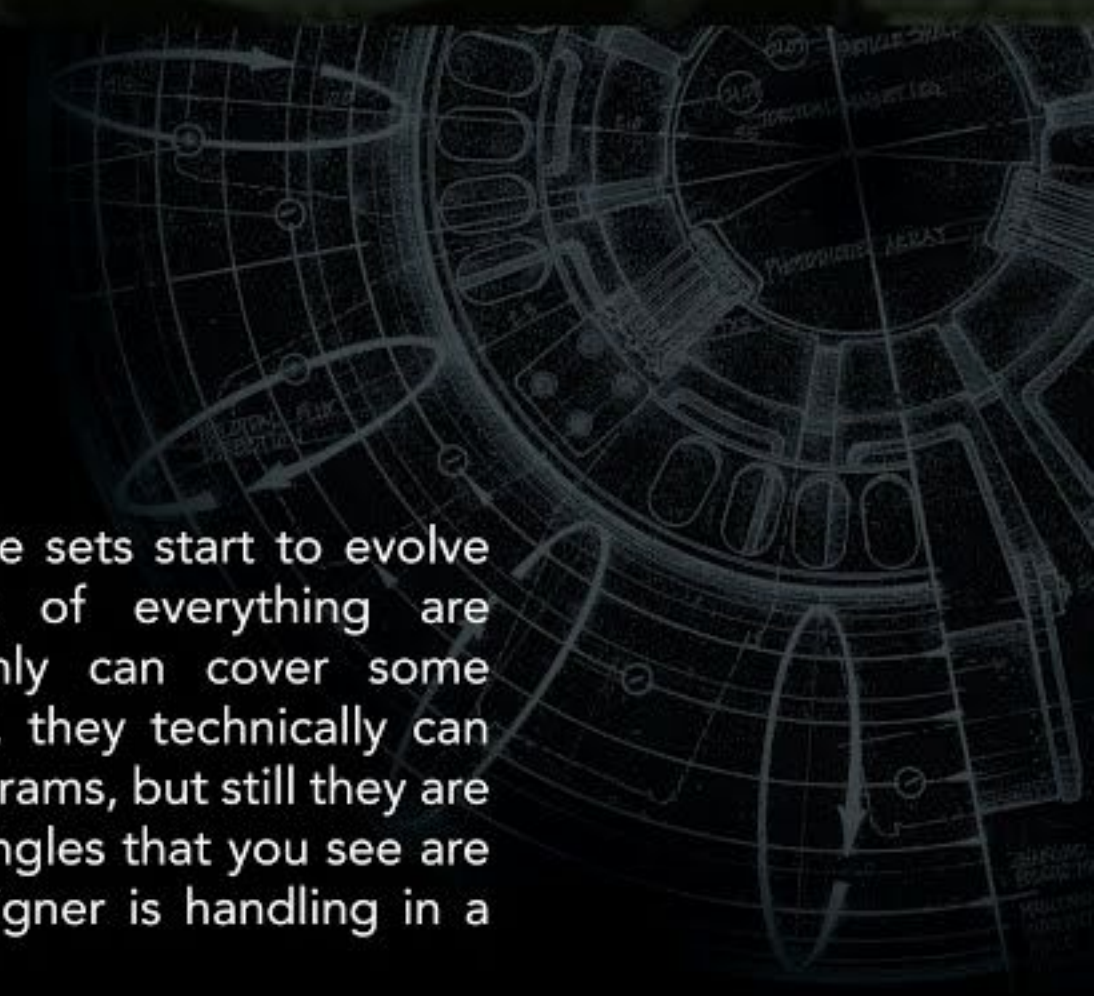
Gaffin: "The whole challenge is creating the space so that it feels absolutely real when you walk into it, but then knowing you're going to blow it up. So, everyone all the way down the line in every department understands that. And then you accommodate building the floor, building a piece of furniture. We got to do the kitchen, which was really fun..."





Tony Bohorquez

Bohorquez: "Many of the sets start to evolve simultaneously. Models of everything are required—computers only can cover some aspects of design...well, they technically can do everything in 3D programs, but still they are a 'flat-screen,' and the angles that you see are limited to what the designer is handling in a particular spot."



Set photo

Set photo



Gaffin: "One of the most fun sets to do was taking the house and making it a party for [Tony Stark's] birthday in the movie. We wanted to have major wow factor. Basically it was a big lighting job—we spoke

with lighting a lot—but I created this whole wall of glass balls behind the DJ's booth, which reflected everything. The food that we used, and the drinks, everything was just elevated very high, to make it special."



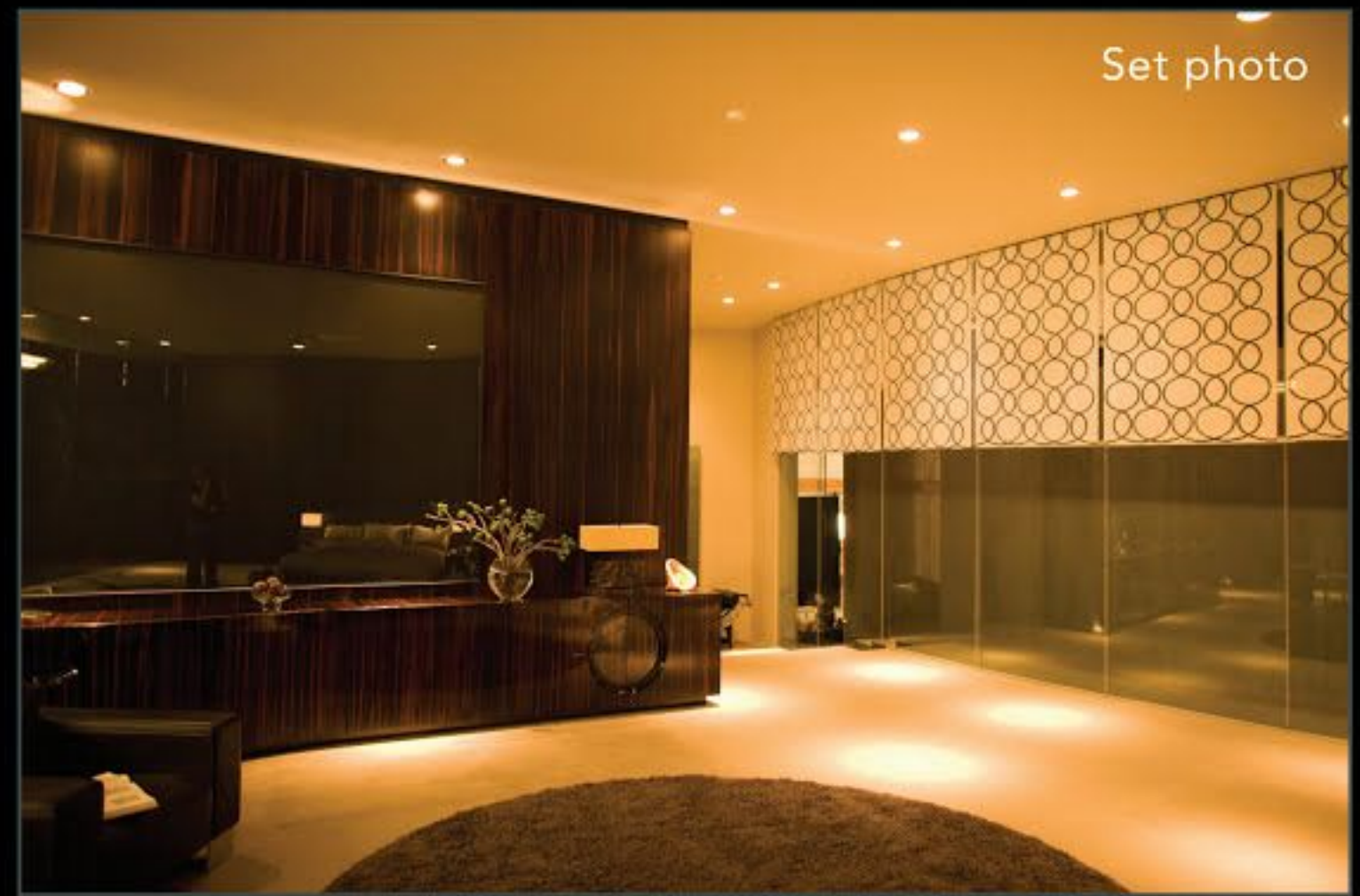
Tony Bohorquez



Tony Bohorquez



Set photo

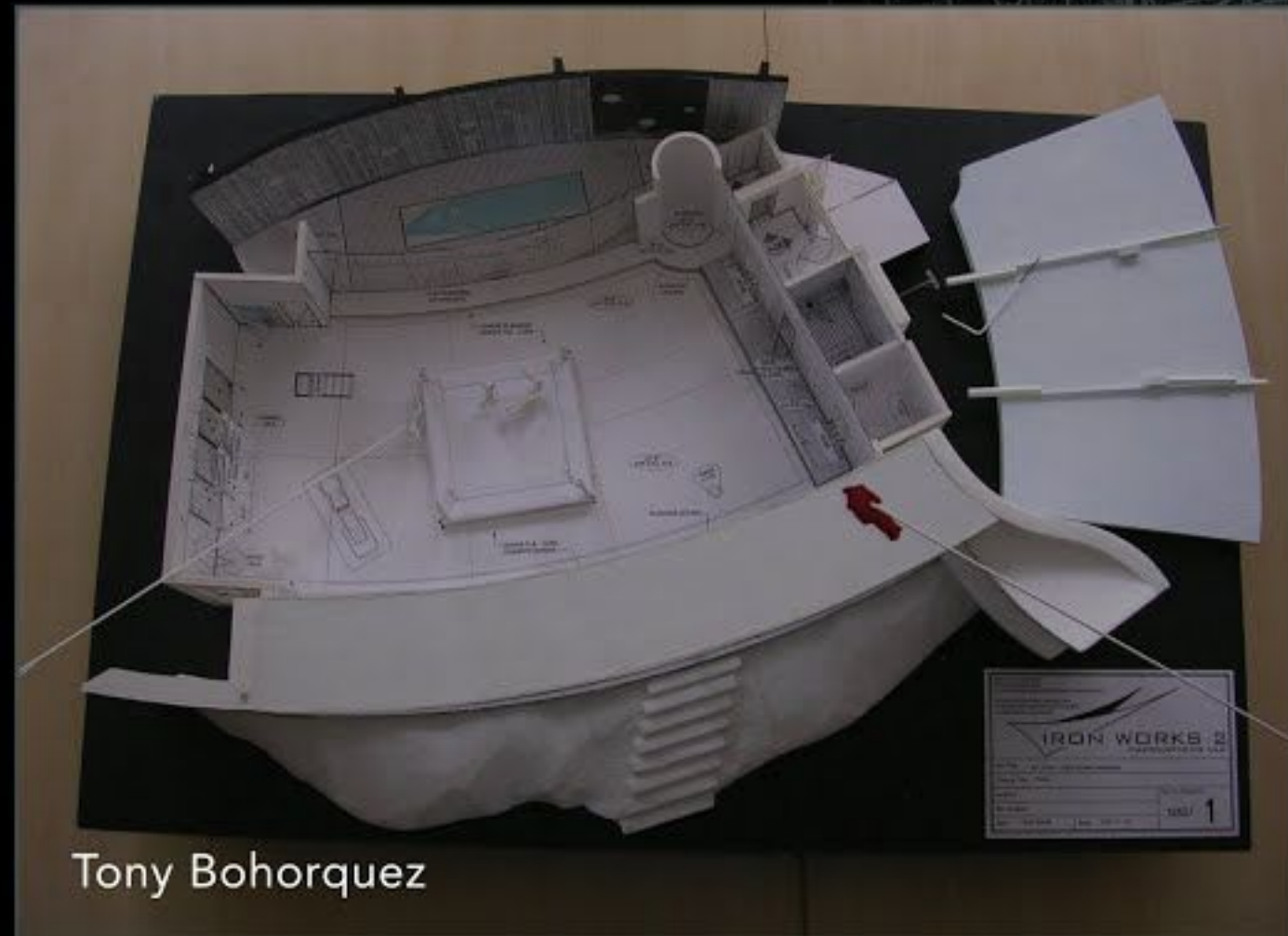


Set photo





Tony Bohorquez



Tony Bohorquez



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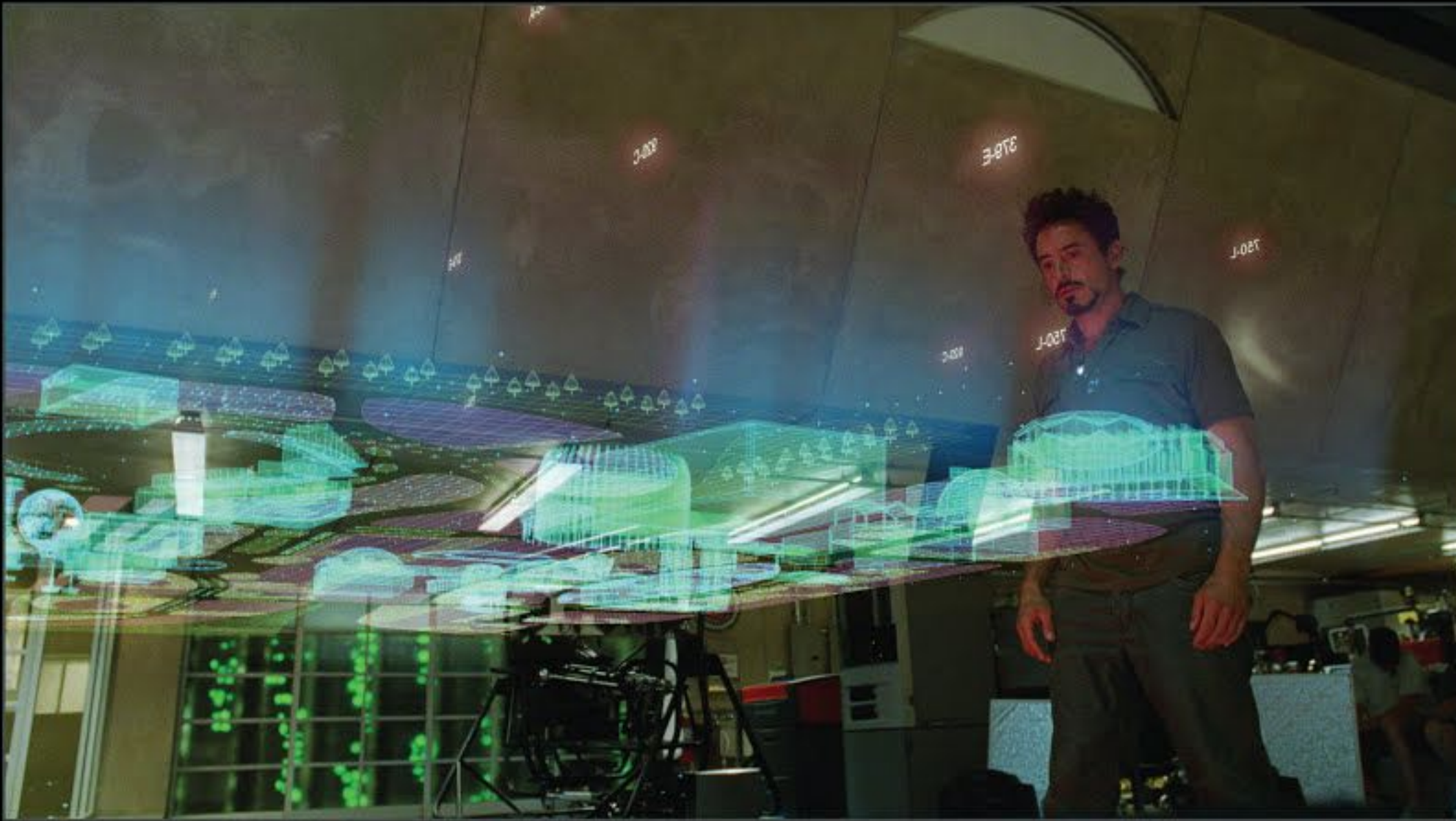
Set photo

TONY'S WORKSHOP

Latcham: "In the first film, Tony Stark interacted with holographic projections off of a lit-up tabletop in his workshop. The VFX were simple but really effective. We wanted to carry that conceit to a whole new level in this film."

Riva: "Originally, in the first movie [Stark's workshop was going to be] much more hands-on and grease-monkey—kind of a real garage, mixed in with some high-tech stuff. As we progressed in [making] the movie, it felt like it needed to be higher-tech. By the second movie, we've established the mixture: more of the high-tech stuff, with the low-tech stuff in the background. But it seemed like we needed to upgrade the garage, somehow."





Riva: "I was looking at my iPhone one day and saw it; I said, 'Well what if the whole floor of the garage is glass?' And at the time we had a lot of interactive 3D stuff that's supposed to come from this giant display coming right out of the floor. So we thought, well then, you'd need some lights. So let's put some lights in. So I did a little sketch with lights all over the place and it looked pretty good. I showed it to Jon and we upgraded everything in the garage."

Latcham: "We built a new floor for Tony's workshop, complete with rows and rows of lights that could act as interactive sources for the holograms."



THE ART OF IRON MAN 2

Tony's workshop isn't only for building new technologies and storing his armor—it also serves as the home to his fleet of classic cars.

Latcham: "We wanted Tony's antique car collection to continue to grow—so in addition to Jon Favreau's hot rod from the first film, John Armstrong, our picture car coordinator, reached out to the Petersen Automotive Museum here in Los Angeles to get some truly collectible cars. These would serve as a nice complement to Tony Stark's brand-new 2010 Audi R10 Spyder, which we were very lucky to get hold of for the film."





Riva: "The garage [set] was from the first movie. We packed it away and then we brought it out of mothballs again, and, you know, it's a little boring to do the same thing each time. We wanted to show progression, so we changed everything. I've put in a little bit of set dressing here and there, like there's three Buddhas underneath the TV in the workshop. I saw them at a shop, and I just thought they were nice so I bought them and I put them on the set. When Robert walked in, he loved them—so they ended up in the movie."







Ryan Meinerding





Riva: "You've got to remember you drag the audience along with you, so they have to feel comfortable in that world. You don't want them sitting around asking, 'How does this work? How does that work?' You want them to follow the story."

HAMMER INDUSTRIES





Bohorquez: "The model started to gain more presence, and started to be included in the storyboards. Very soon, it came to be interacting with some of the actors, and to be referred to in the dialogue. Every time this happened, it was obvious the model had to be more "hero." This innocent model piece is now sharing

the screen, and is also part of the developing script! It was a real challenge, because now it has to be more than just clean cardboard. I realize, all of a sudden, I'm in trouble. I decided to use laser-cutting and 3D-printing equipment, to speed the process and to obtain a pristine quality."



Bohorquez: "David Klassen, chief art director, got me full support from the set designers, and very soon a bunch of them were doing drawings for this process. There were Sharon Davis, Noelle King, Page Buckner and my compadre, Ernie Avila—all surrounded by many photographs, and all discussing with me the sizes and the way to break down every piece of the buildings...and still be able to run this marathon of work in just a couple of weeks. Also, we got assistance from the Scenic Crew from the Warner Bros. Studio to do the painting simultaneous with the assembling."

THE ART OF IRON MAN 2

STARK EXPO

ILM



GOERNER



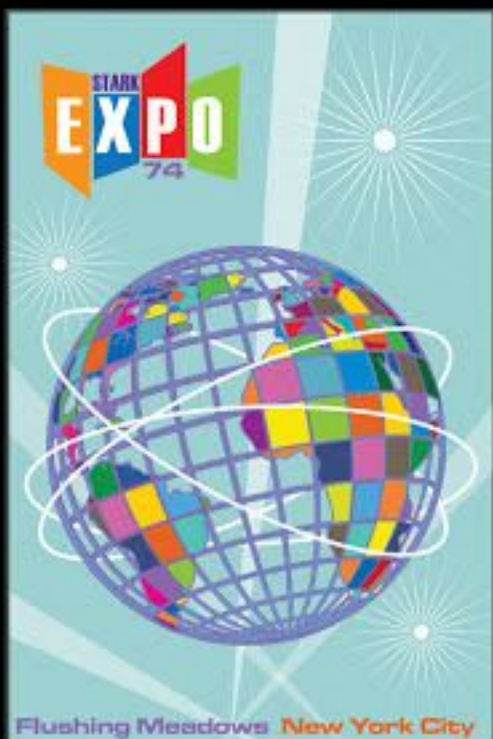
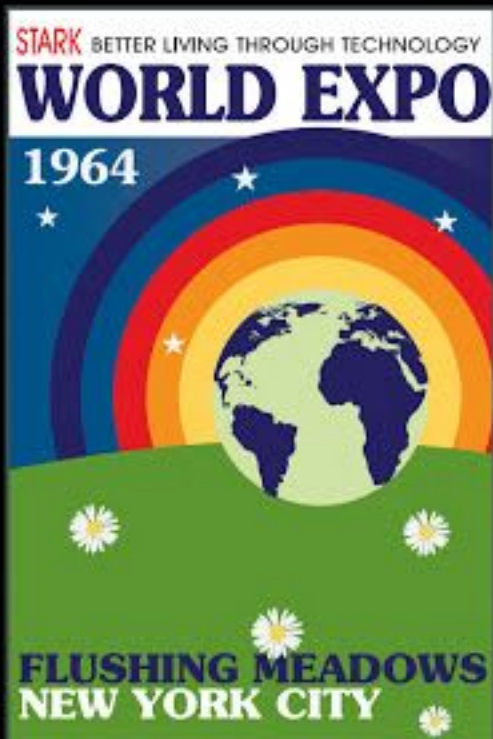
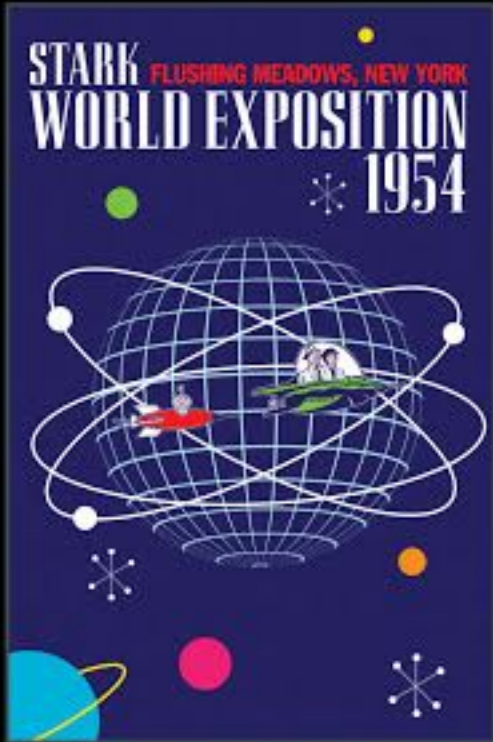
Alonso: "This is the Stark Expo, which Tony Stark has decided to revive. His father, Howard Stark, had started with the Stark Expo in 1974, and he said technology is the answer, technology is the power, and so Tony, as he's decided that he will no longer be in the weapons manufacturing business, he will take on technology. There is definitely more scope, but you're still trying to keep it as real. Sometimes when you go with more scope, you just go off in a different tangent and it's just big for big's sake. But the hard part is to try and have more scope, and still keep it grounded."



Mark Goerner

D'Esposito: "It starts from a design, so our production designer, Mike Riva, sits in with Jon Favreau and Kevin Feige and the whole group and [asks], 'What did the original World's Fair look like?' We start from there. We look at the 1964 World's Fair, the iconic images of the globe

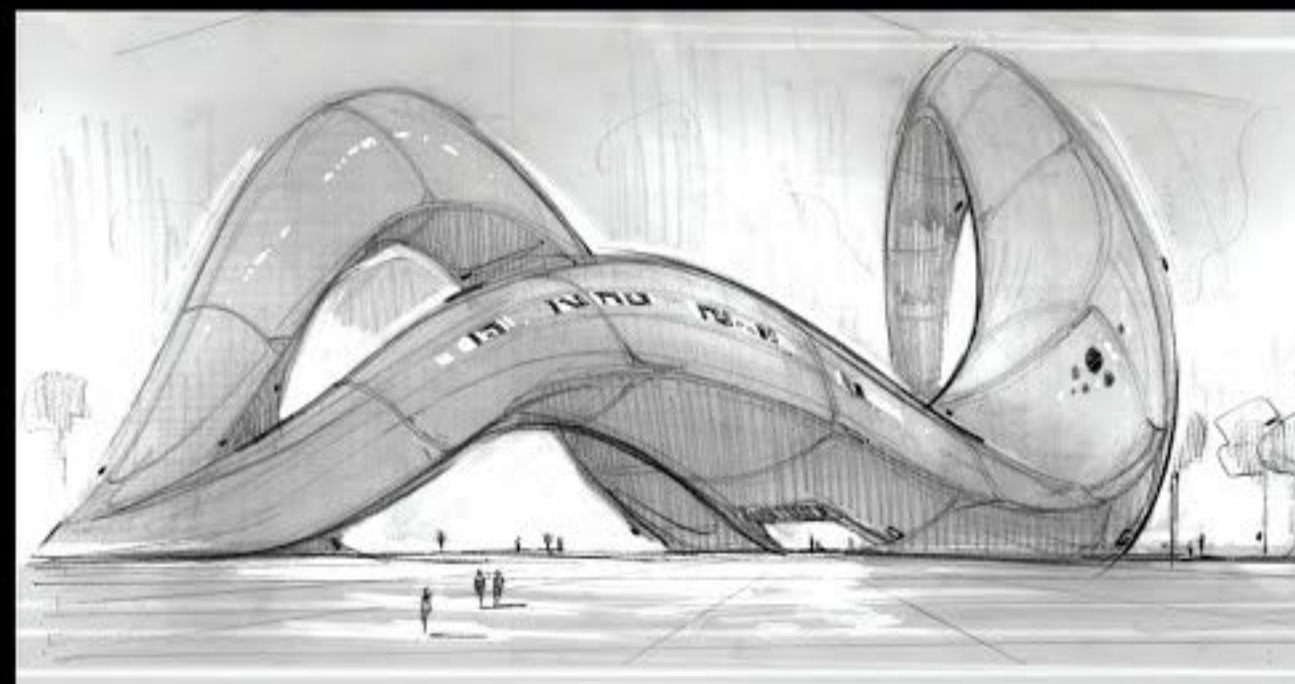
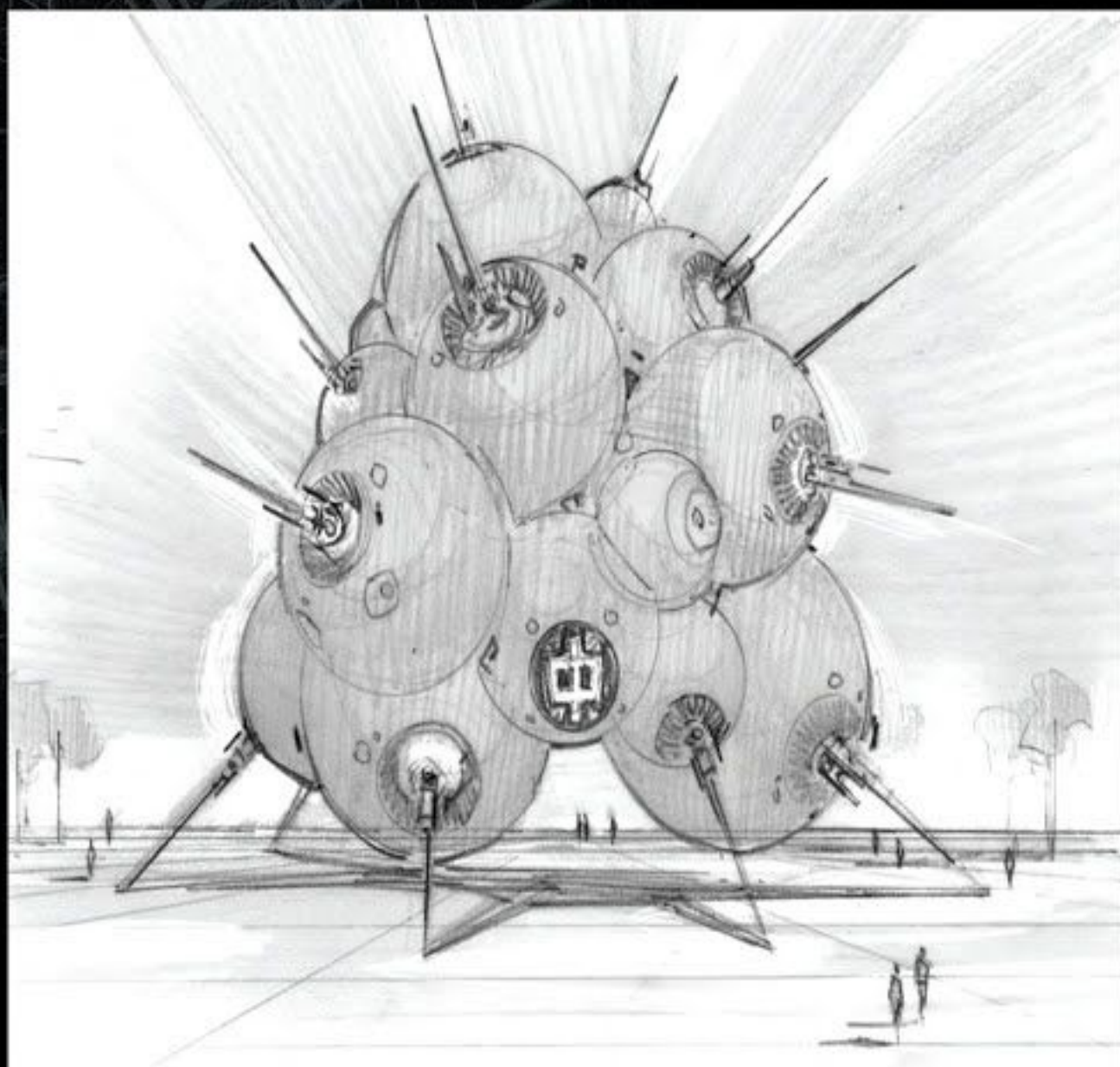
and the entrance and the promenade, and we build from that. We have location people that are going out, finding interesting buildings and/or locations, and we know we can't find everything, so there's some set pieces we have to build."



Favreau: "Continuing the tradition his father started, the aspect of his father that was not involved with making weapons and blowing things up, but instead looking towards the future. It was the Walt Disney aspect of Howard Stark: a forward-looking thinker who saw technology as a portal to a better future. But that dream had been abandoned after '74, and that World's Fair type of Expo had been left fallow. And now Tony decided to take on that mantle and decide to bring about the Expo."



THE ART OF **IRON MAN 2**



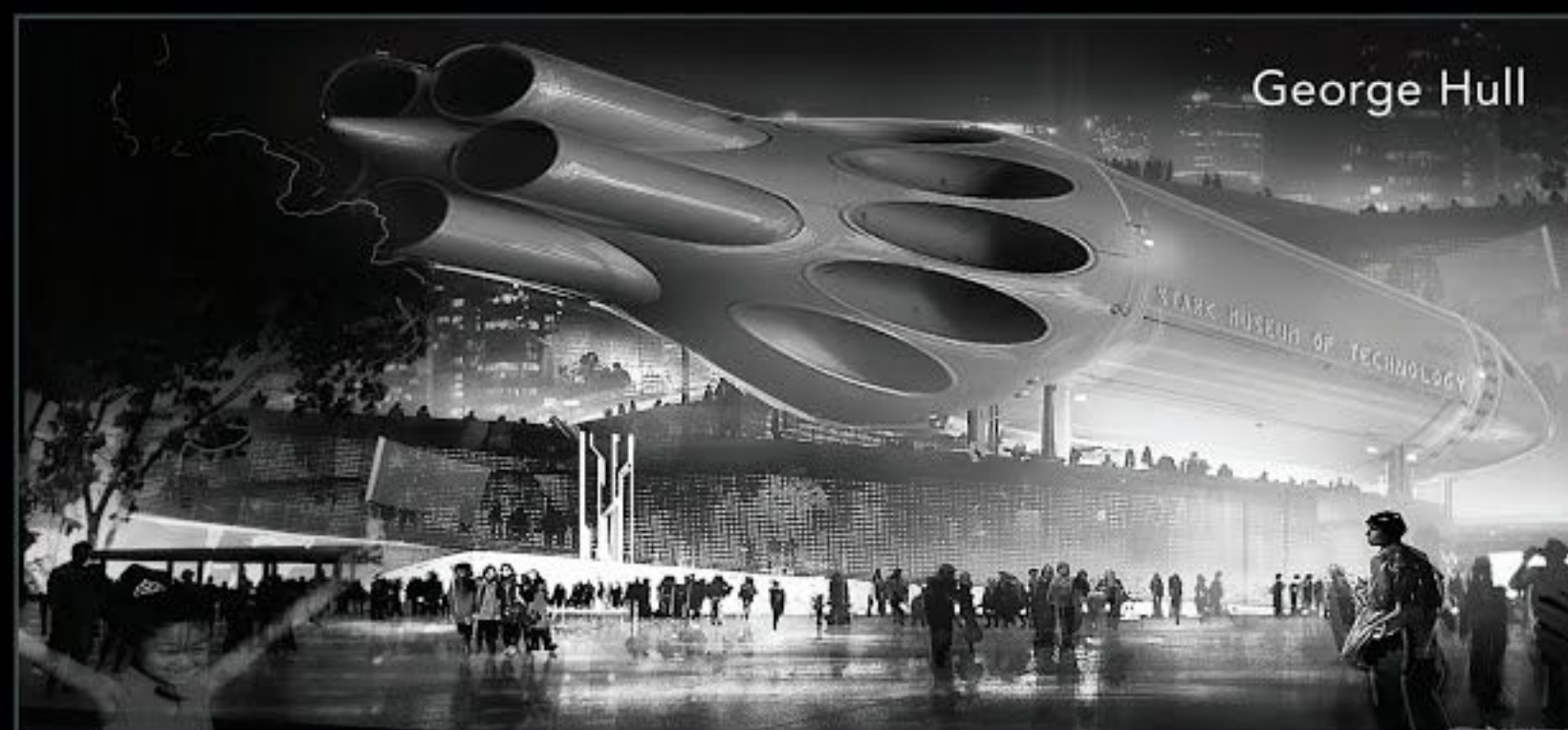
Latham: "In our conference room, where we started prepping the movie, we had a board full of villains, a board full of armors and a third board full of moments from the comics. And in the moments was this moment buried in Marvel Adventures Iron Man, which is our kid series. It was Stark World and it was Tony Stark giving a Steve Jobs-esque keynote speech at some Mac World type convention."



George Hull



George Hull



George Hull

George Hull



Ryan Meinerding



Aaron McBride



Latcham: "Stark Industries doesn't make weapons anymore. What do they do? What's his new thing? And so that evolved very quickly from let's just have a little Stark World thing to let's put on this gigantic Stark Expo. And it very quickly went from this one little image to this gigantic expo. Next thing you know Mike Riva, our production designer, has a guy drawing buildings. You see all these huge, wide shots and people are photographing

Flushing Meadow Park from above in a helicopter and you're like, how did all this come together so quickly? Stark Expo now has become this gigantic centerpiece for the movie. So we were putting all this together for the beginning of the film and obviously if we're going through all that much trouble, then that should be where the finale happens."



George Hull



Mark Goerner

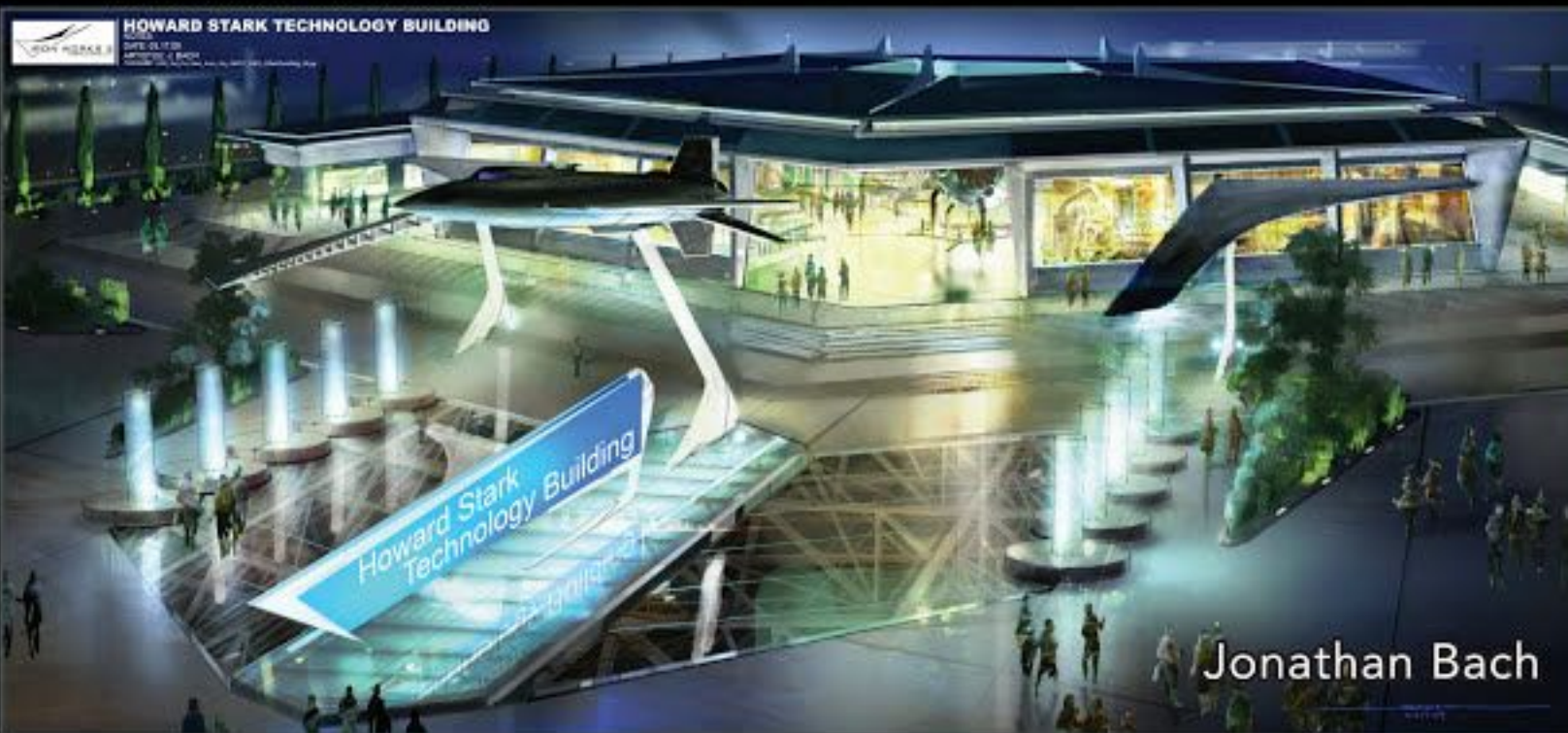
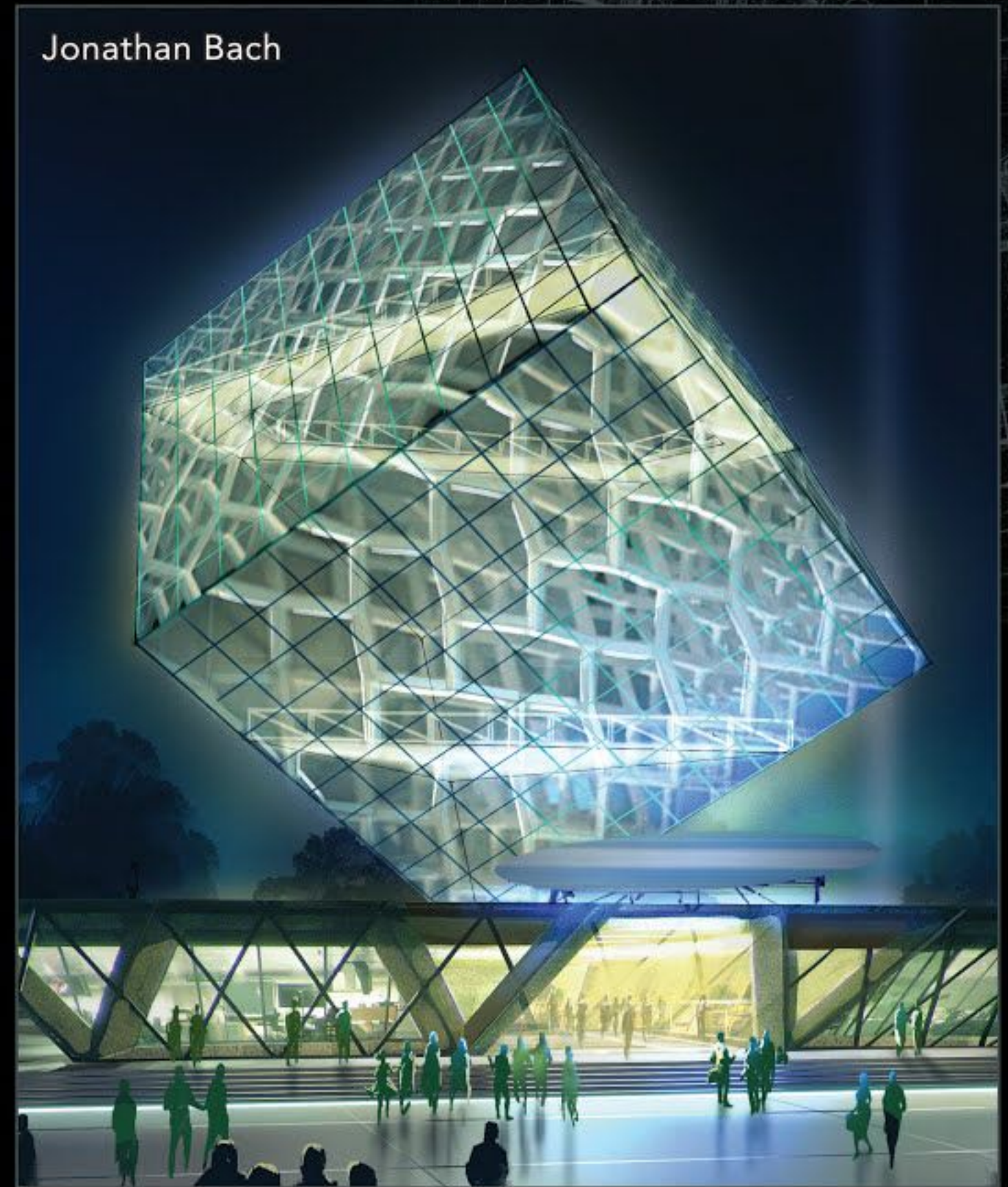


Riva: "The Expo's the biggest challenge for me. How much of an influence were the old World's Fairs on Tony Stark's father? When we initially started it was a reference to the old World's Fair, and the script called out for a modern, very futuristic kind of World's Fair, which is all about renewable energy, renewable resources; everything from education to cars to everything of the future."

George Hull



Jonathan Bach

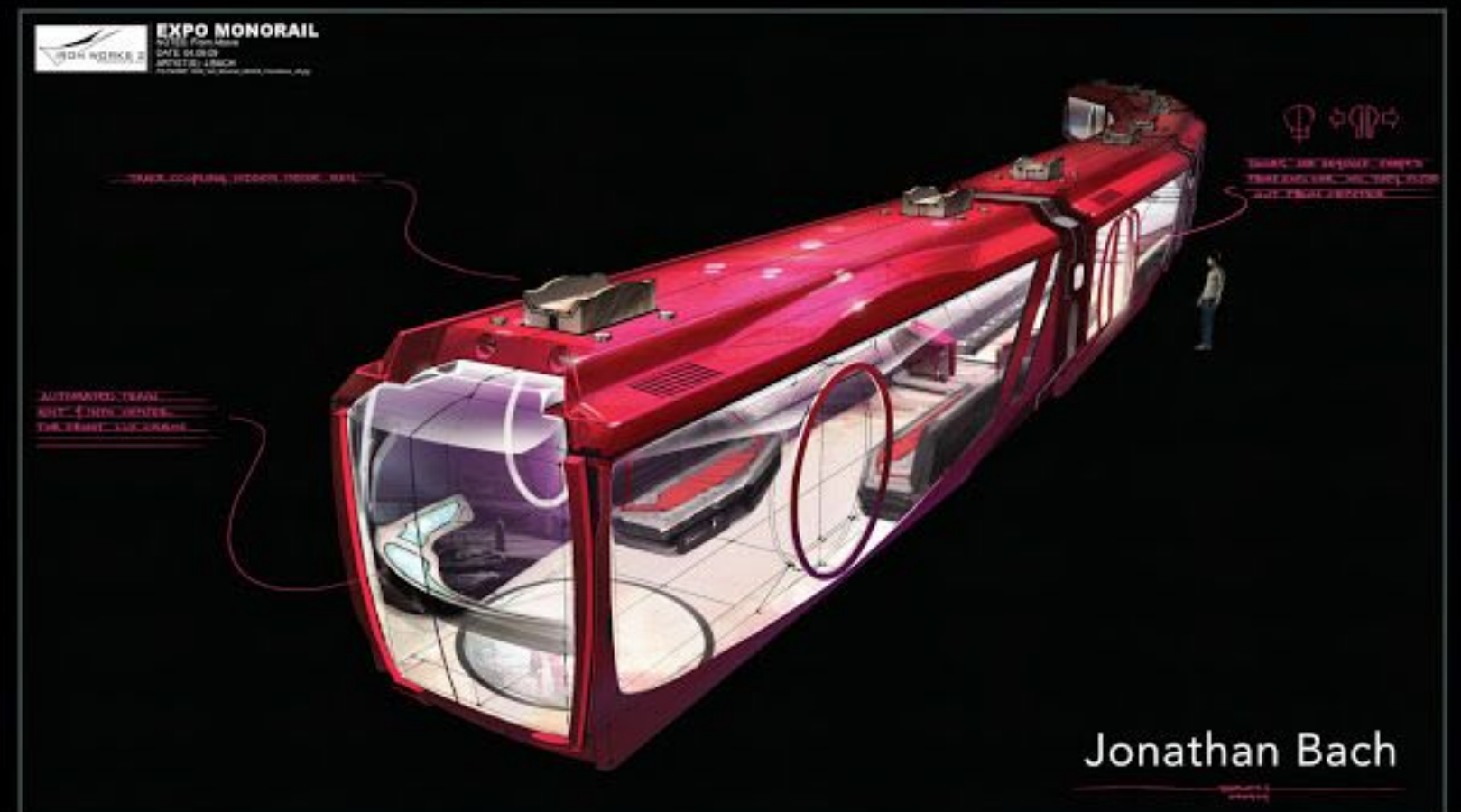


Mark Goerner



Riva: "As the script developed, it became more and more an homage to his father and more and more a kind of a retro thing started creeping in. We have all these immense variations of something really high-tech and something a little lower tech. Once you figure out all the things you have to have, then you start breaking it down into what you're actually going to build. And so, those pieces start to come together and because they're so massive, you can't build them all in one place."





Favreau: "Last time, [Tony] said, 'I'm not going to make weapons.' Well, what has he been doing? He's trying to bring people together and he's trying to look forward to a brighter future. I felt that that was something that was in the headlines, there seemed to be a current

that was running through society; an interesting combination of tremendous cynicism about the economy and where we fit in, and what defines our nation."

Favreau: "But also, this forward-looking mission that is going to change the way that we live in the world, and the way we live with our environment, with each other, with other nations."

Jonathan Bach

Jonathan Bach

THE ART OF IRON MAN 2

Bohorquez: "It was a long process, departing from recreating an icon that was physically gone, but that still carried an influence that you can follow the trail of, for decades. It was relatively easy to find plenty of documentation, which always revealed good surprises—things were even better than they initially look—allowing us to quickly immerse in that time period."





Riva: "First of all, you listen to the director. He grew up not far from that giant pavilion, which actually was called the Tent of Tomorrow. He saw it from his bedroom window as a child. It wasn't my favorite building, frankly, but it was his and it was also only the real building standing. All of the rest of the buildings were gone from the '64 World's Fair. So the notion is that that was the best place for a big presentation; it seemed like the right place. We went back and visited—it's immense, it's huge. So that kind of defined pretty much the scale and the size of everything."

D'Esposito: "We do have practical buildings we're photographing and using as other buildings around that will become pavilions—so it's the combination of original designs, existing buildings and building sets that we put together. Our visual effects person has his daunting task of making it look like one location. And it's not just on the ground: We have to make it look like it's one place from an aerial point of view. We went to the original World's Fair. We've taken the measurements; we know exactly how it lays out."

THE ART OF IRON MAN 2



To combine all the elements—location shots, CGI buildings, miniatures, sets—with the actors, the largest green screen in film history was constructed at Sepulveda Dam in Los Angeles.

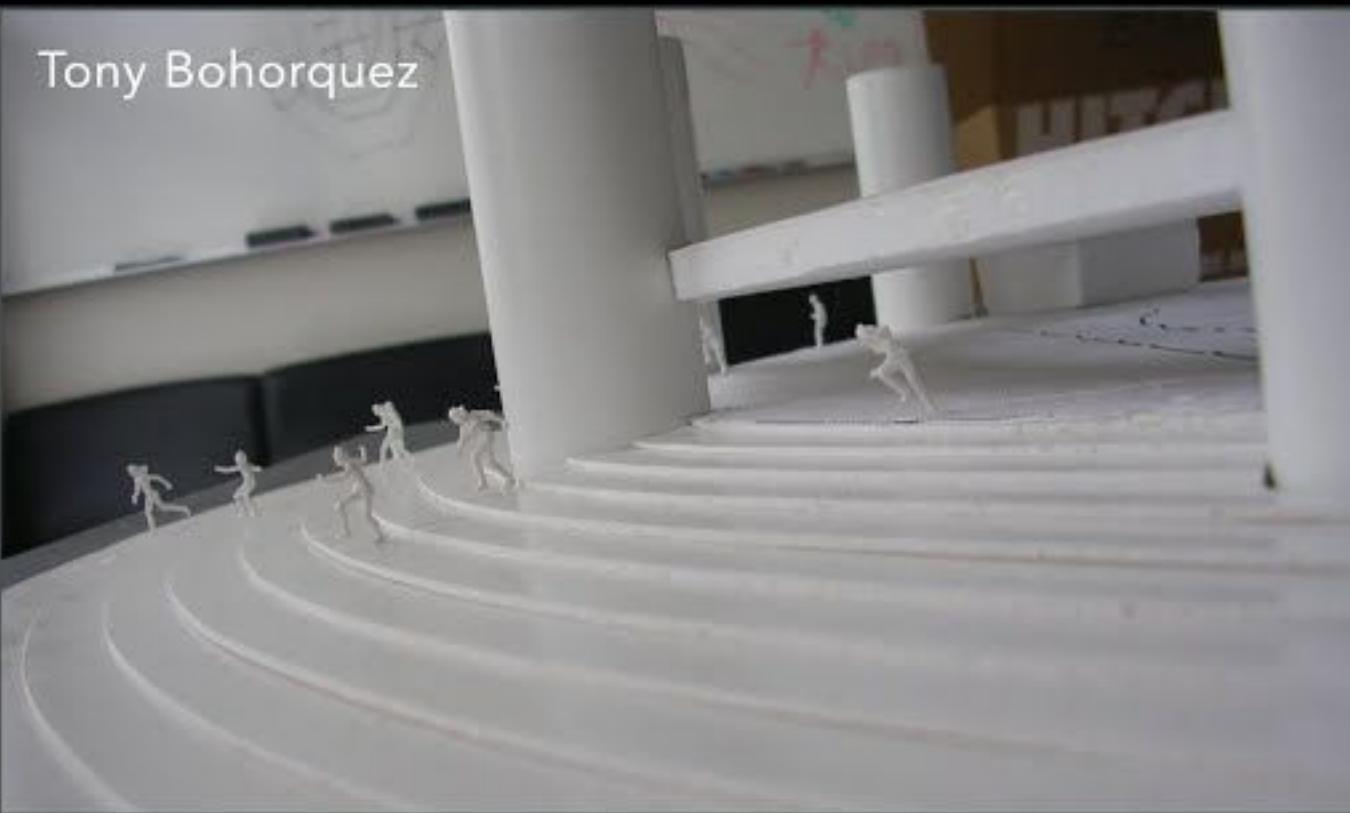
D'Esposito: "That green screen I think was approximately 300 feet by 400 feet. When you're making a decision, putting a green screen up...is it cloth? Can you get that much cloth? It'll be windy up there, how do you hang it? But our art department and production crew really solved a lot of technical issues. We used shipping containers—I think they used approximately 200 shipping containers—and we built the green screen against that wall. Finding a location to build that green screen was problematic. Where do you build something of this size and magnitude? We were lucky to find the Sepulveda Dam."



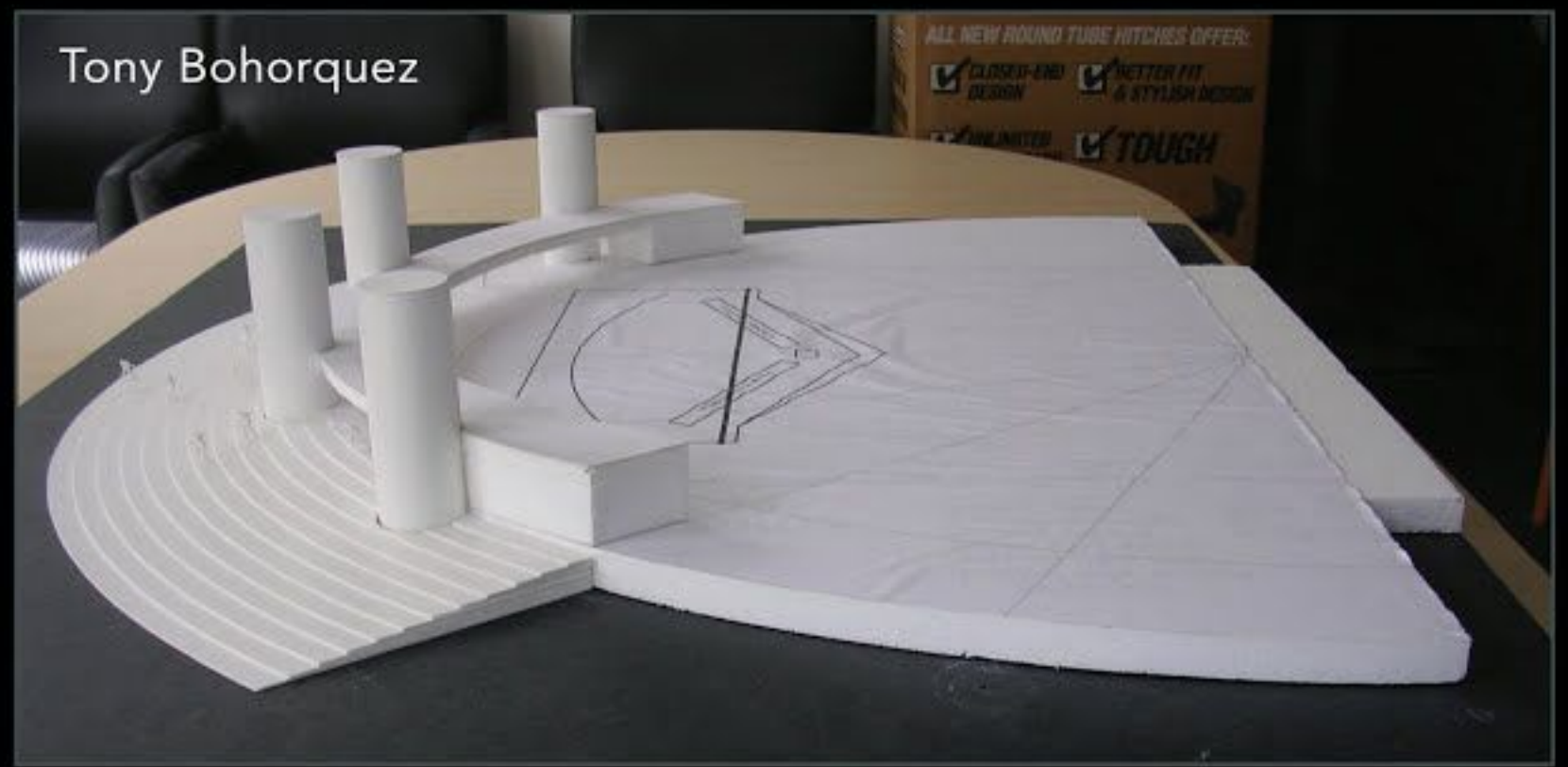
Jonathan Bach



Tony Bohorquez



Tony Bohorquez

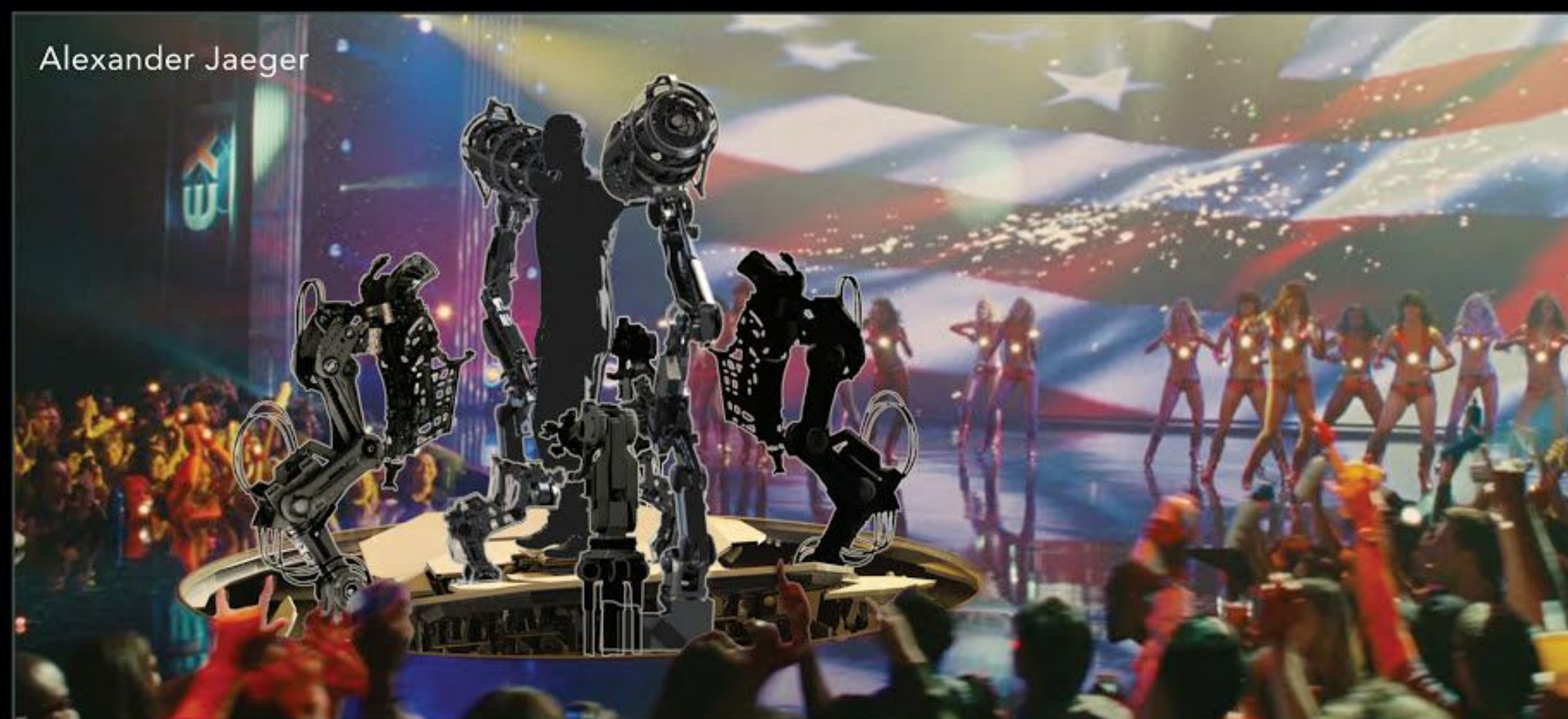


Bohorquez: "This project started to roll with me after getting a call from Production Designer Michael Riva, who asked me to do a model of a World's Fair. Under his direction, and using conceptual drawings elaborated by illustrator Daren Dochterman, I started

working from my garage. The model is simple, but it has the key elements and certain beauty. Once it was extracted from the computer environment, and adding the elements together brought the sense of scale to it."



Riva: "When you're talking about something as ethereal as a post-production effect and pieces that come together, you end up explaining it over and over and over again. Illustrations we do, we do models, you try through all those different ways to explain exactly how these pieces fit together. Matty is a pragmatic guy, Matty Libatique. Michael Bowman, as a lighting guy, he's very practical; he and I collaborated a lot on this picture cause that whole Expo sequence is all about lighting. I would contribute maybe 30 percent, he gave in the 70 percent and made it look right. I've done some lighting shows and you can build the beautiful stuff, but if it's not lit properly... Lighting is everything."







Zophres: "The first rendering I did for the Ironettes, we talked about having a retro feeling, and I went a little bit too burlesque. Then we kind of pulled back, and I looked at various cheerleader outfits one more time and I said this is what it really needs to be. I did another rendering with the costume illustrator and that one was pretty much what we went with. We adjusted, we added more gold, we got the balance between the gold and the red."





Zophres: "Then it was a matter of finding the right fabric, and the fabric that those are made out of, it's liquid spandex. I was like, that's such a winner."

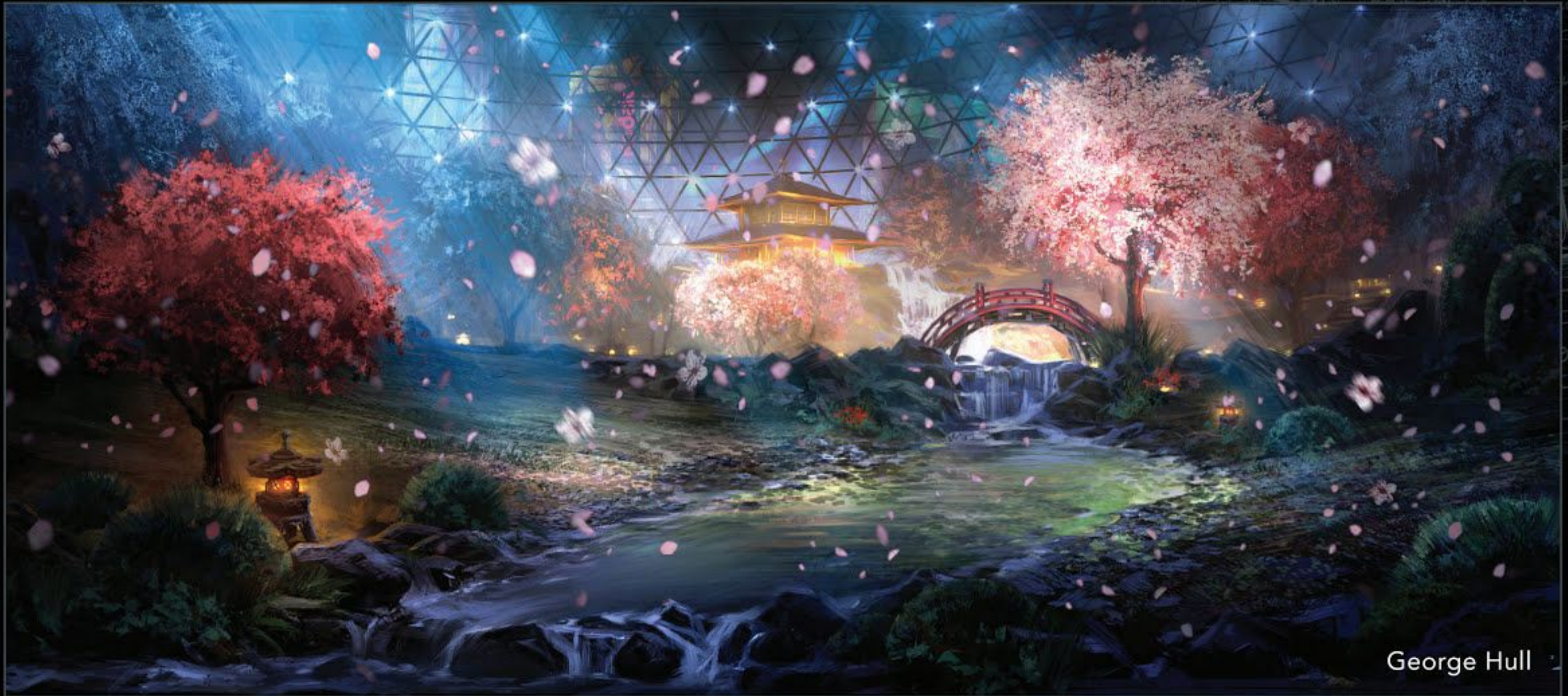


Production still

Costumes designed by Mary Zophres.

THE ART OF IRON MAN 2





George Hull



Tony Bohorquez



Tony Bohorquez

Riva: "The Japanese Garden is a separate set in itself; we only built a portion of that. You build all those elements together, where you have to have real interaction with characters and you have to have real stuff happening, and they will enhance that in the visual effects world."

CHAPTER FIVE:

FORGED IN IRON

In a film as effects-driven as Iron Man 2, planning is essential. And storyboards are a key to that planning. By mapping scenes out, shot-by-shot, it becomes possible to coordinate the live footage with all the additional layers of post-production.

Co-Producer and Visual Effects Supervisor Victoria Alonso elaborates that the 'practical effects' is everything that you get to do in camera. So anytime you need to do anything you can actually capture on set, on location, live—those are all special effects. 'Visual effects' is augmentation of the practical effect, or is everything that you have to do digitally later.

"So, for example, if we were to have an explosion, Dan Sudick and his team will have the big explosion live. We will, in turn, comp in the entire Stark Expo. We will fly in Iron Man, we will fly in War Machine, and we'll make sure that the entire shot is composited, as if we did it all in that one take."

Storyboarding scenes in an action movie like Iron Man also creates a special kind of moviemaking magic, when new opportunities are discovered, and new roads opened. On the following pages, two important sequences from Iron Man 2 are presented in their storyboard form.



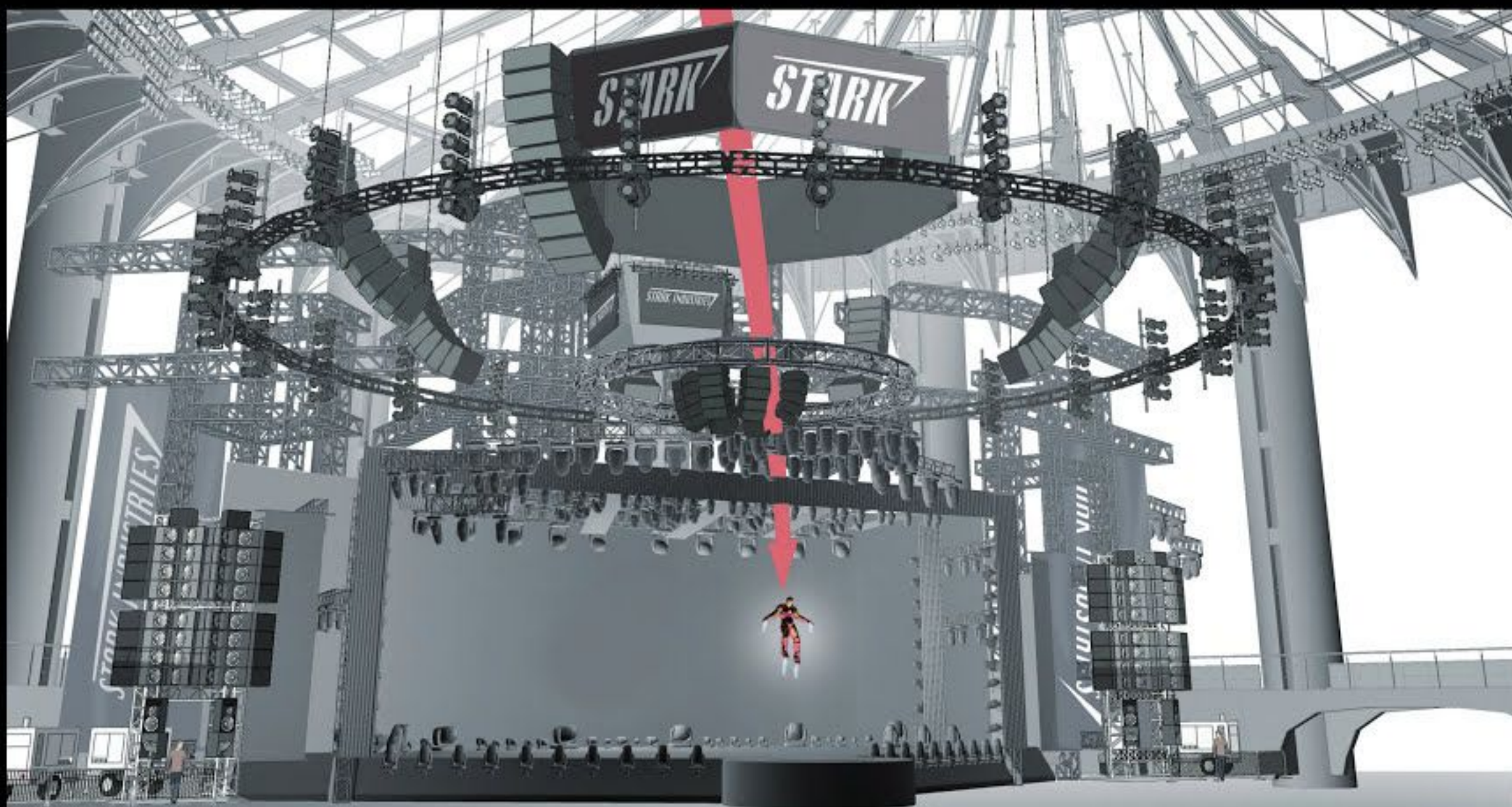


STARK EXPO LANDING



For a scene as complex as Stark landing at the Expo, not only were hand-drawn storyboards employed—but so were complicated 3D renderings, so the filmmakers could get a good feeling for the angles and structures required.

Here, Iron Man descends through the roof of the pavilion, down toward the stage below, and finally makes his landing before the giant television screen.





1: Iron Man lands in the Stark Pavilion...



2: ...and greets the cheering crowd...



3: ...as the screens behind him juxtapose American iconography with the super hero's exploits.



4: The faces of the crowd reflect in Tony Stark's facemask...



5: ...and the cheering only raises Stark's spirits!



6: He begins to rotate as the machines below start the complicated procedure of removing the Iron Man armor.

DRONE BATTLE



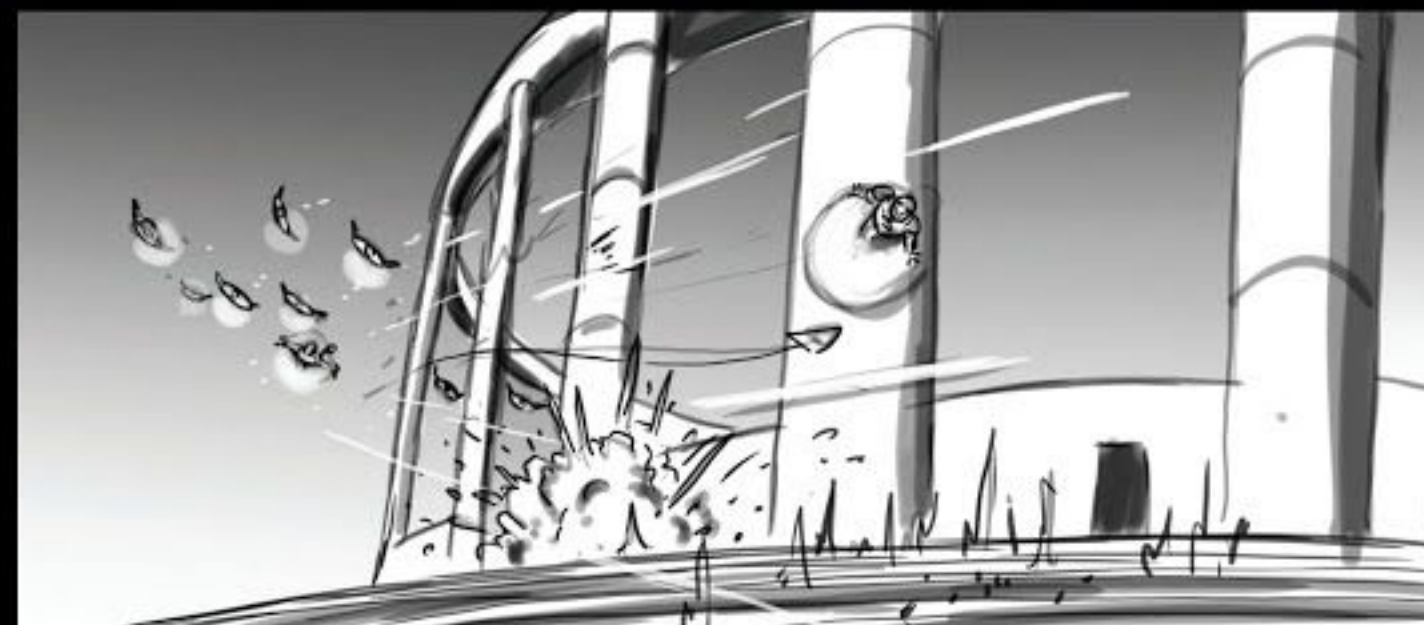
1: The Drones rocket around the Stark Expo pavilion, in pursuit of Iron Man.



2: Spectators watch as stray bullets tear into the pavilion.



3: The pursuit continues at breakneck speeds, as the Golden Gladiator pulls ahead—

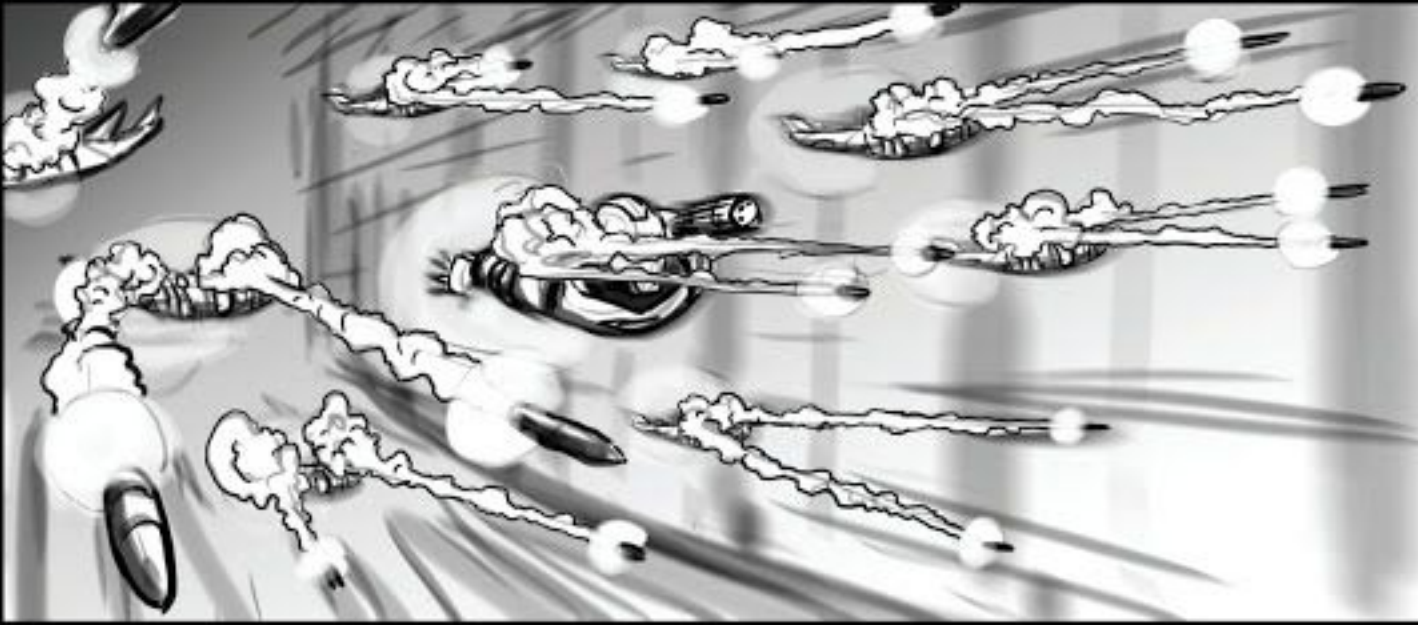


4: —but the Drones aren't about to give up.

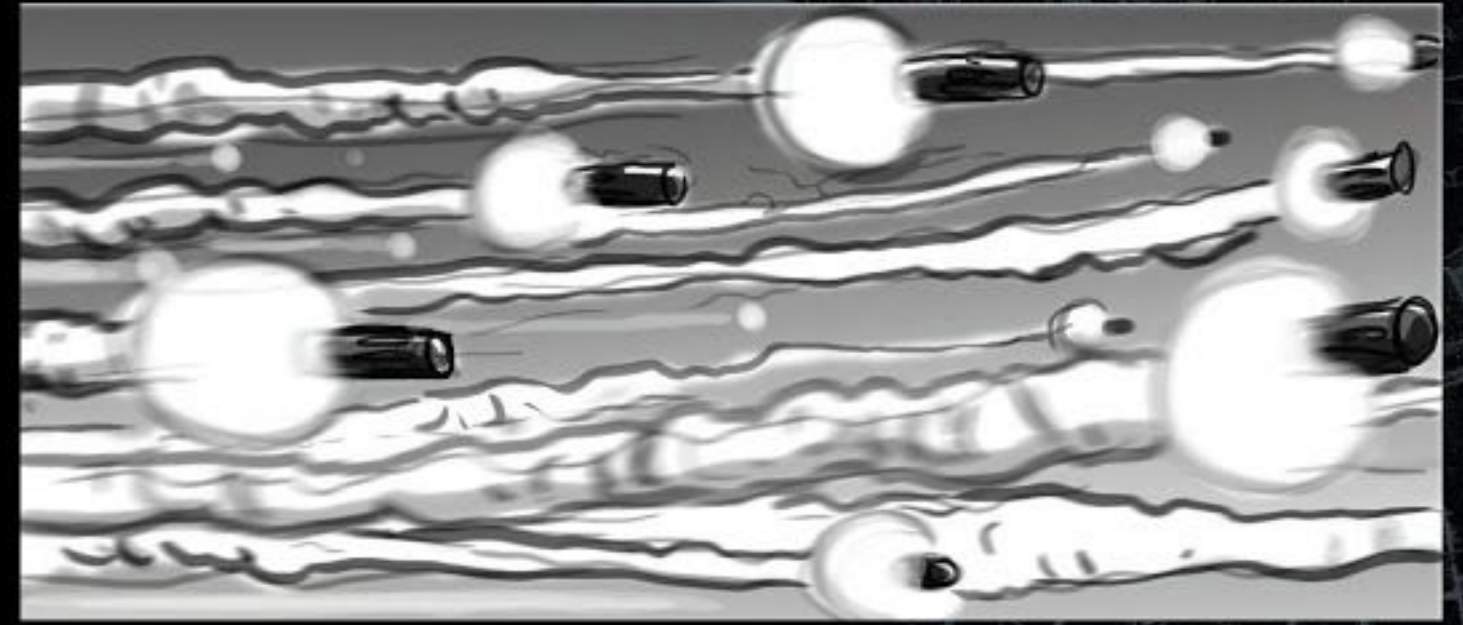
5: The Drones lock on to Iron Man—

Favreau: "I collaborated with Genndy Tartakovsky, who is somebody whose style I was actually trying to emulate a lot as I was conceiving visual effects sequences in the first one. It doesn't come naturally to me, but Genndy breathes it. And I had met with him and been intrigued by Samurai Jack and by what he did with the Clone Wars animated series and I finally just reached out and I said, 'I don't know how we're going to do this, but I want to work with you.'"





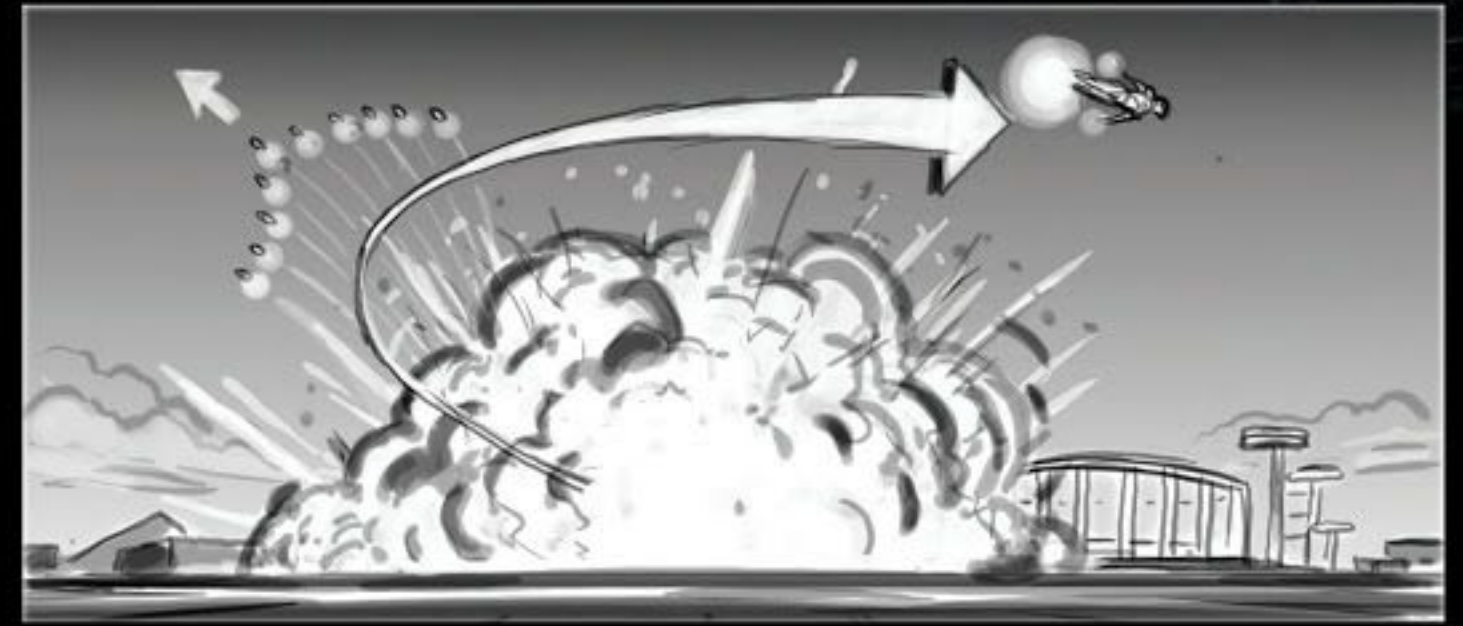
6: —and let loose with all they've got!



7: The missiles rip through the sky—



8: —and nova into a fireball from which escape seems impossible—



9: —but not for Iron Man, who flies through the fiery oblivion!



10: Stark pulls up high into the sky...



11: ...where he takes a look around.



1: The coast seems clear...



2: ...but appearances can be deceiving, as the sky explodes around Iron Man!



3: Below, the Drone legion pumps explosive shells into the sky—



4: —taking deadly aim at the Armored Avenger.



5: The barrage continues...



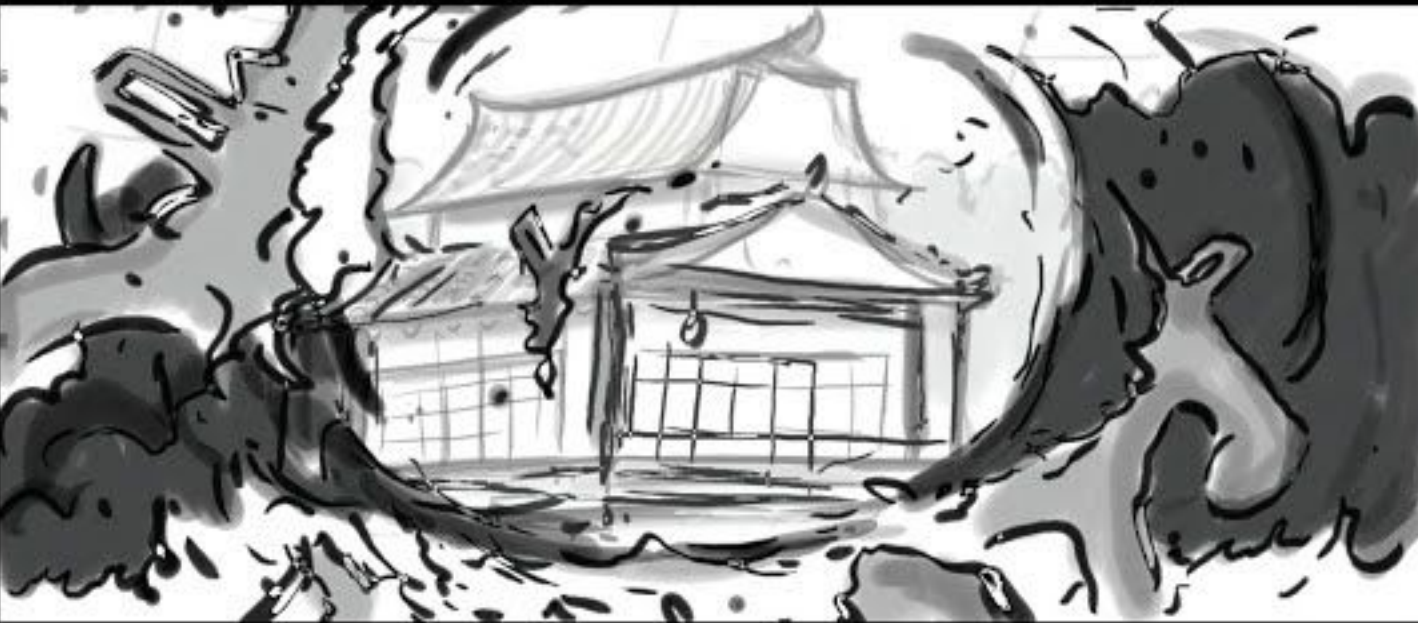
6: ...pounding at Iron Man, far in the distance.



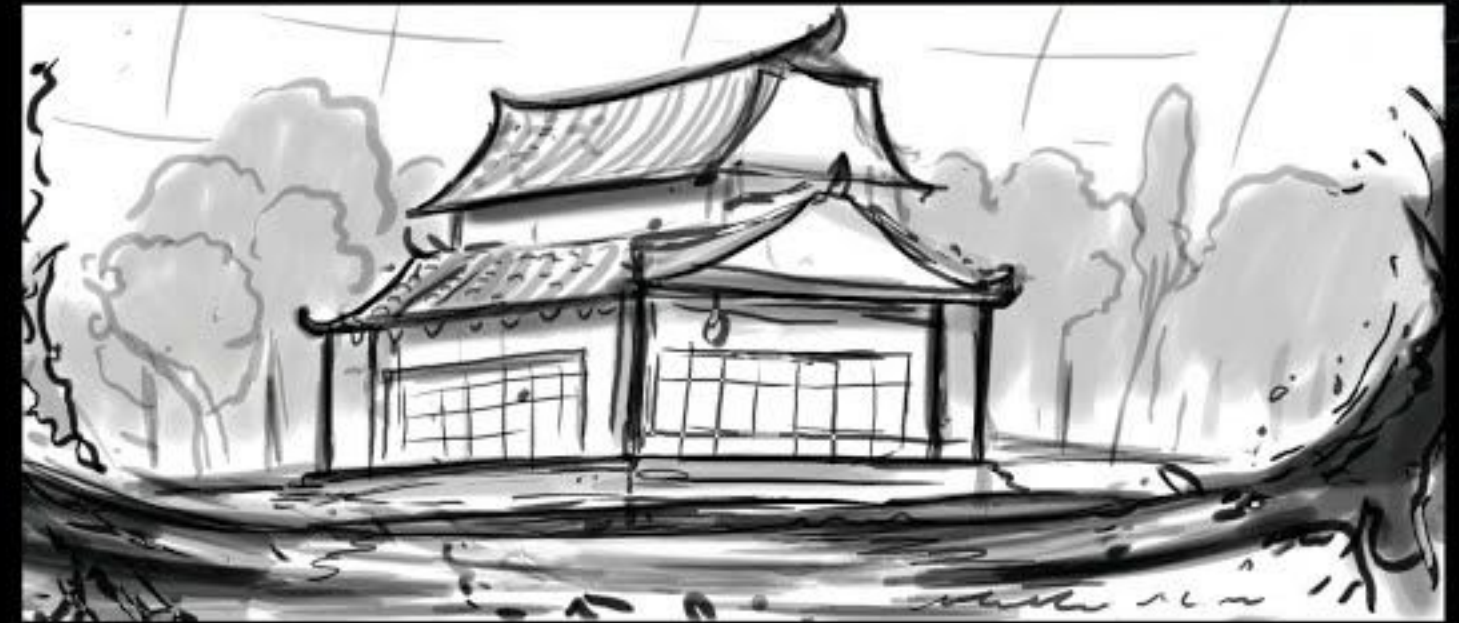
1: It looks as though nothing can stop the onslaught—



2: —until the Drones themselves explode!



3: Behind the fiery robots the smoke clears...



4: ...to reveal the Japanese Pavilion...



5: ...which, itself, erupts into a massive cloud of shrapnel and fire!

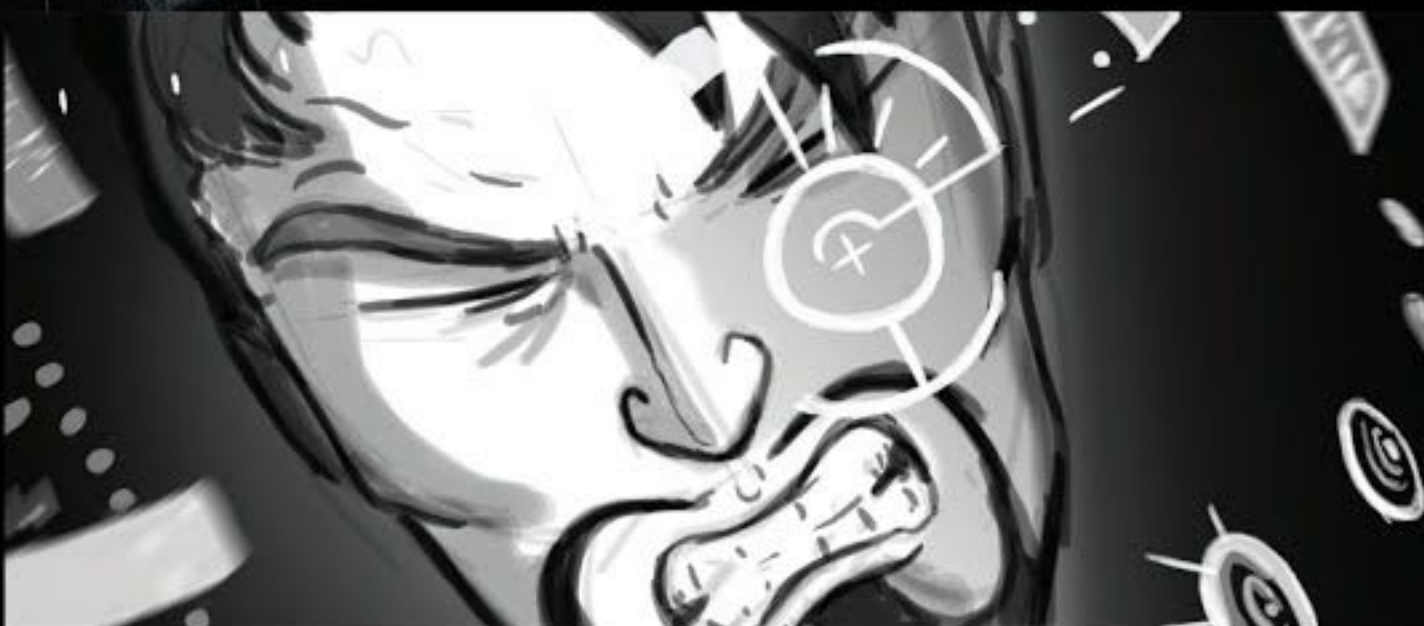
Favreau: "He and his partner came up with wonderful effects designs and animatics. And then he even oversaw the transferring of the animatic into pre-viz, and was even present on the set for much of the shooting in the Japanese Garden. He had tremendous contributions to the third act of the movie. I loved his sense of tone. I loved that he had fun with the action. It was clever, but it never made fun of it. You always felt invested in the stakes."



1: Iron Man stands against an endless horde of Drones—



2: —slashing and tearing into his armor with their hand-to-hand weapons.



3: Inside the Iron Man armor, Stark winces with pain...



4: ...as he realizes how close a call that last cut came.



5: Iron Man stumbles back...



6: ...and takes stock of his situation.



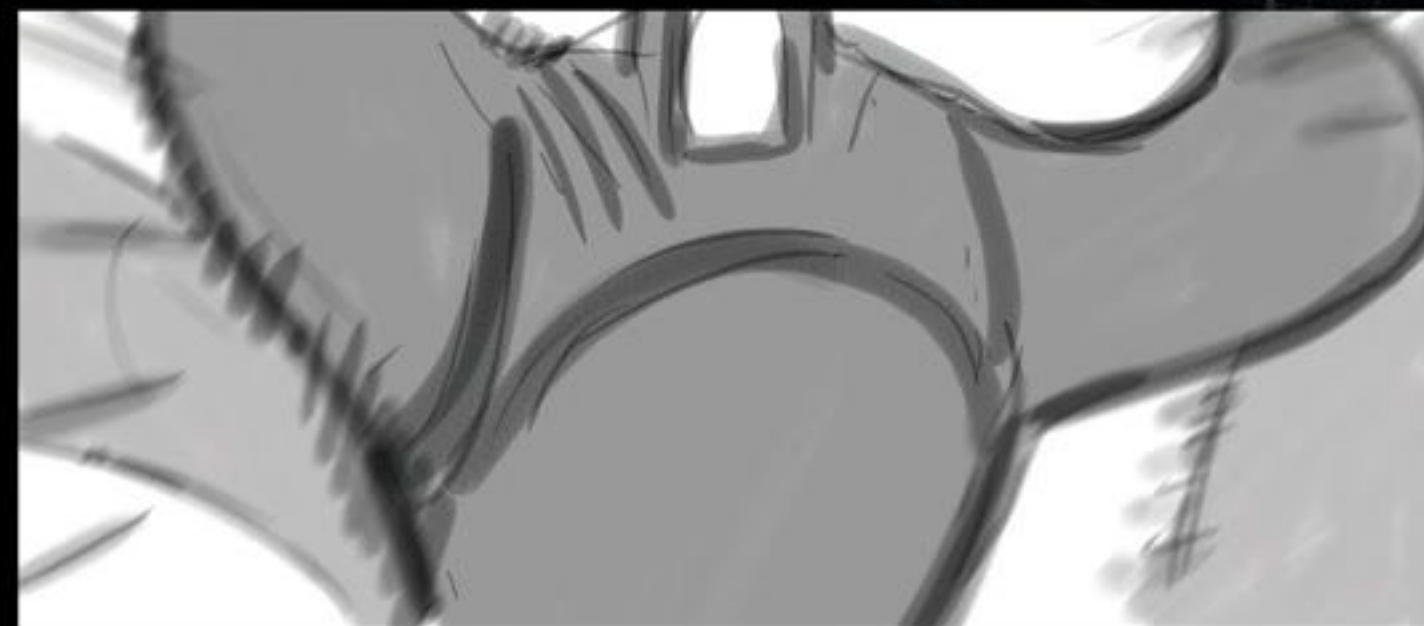
1: Things don't look good for Iron Man...



2: ...and it seems like they're about to get even worse—



3: —as the Drones move in and attack—



4: —closing in on Stark—



5: —and revealing another skirmish behind them...



6: ...as War Machine faces off against more Drones in a battle of his own.



1: War Machine strikes—



2: —but the Drone evades his blow.



3: James Rhodes dodges an attack himself...



4: ...but through sheer force of numbers, the Drones have the advantage.

5: Rhodey takes a second hit!

Favreau: "His reference point was [Sergio] Leone and [Akira] Kurosawa. He stylized it a step beyond, and it always verged on the ridiculous—but never quite. Having kids, I'm not comfortable having human violence reach that peak because I want to be able to share that with kids. I want other parents to not feel irresponsible, yet have that kinetic confrontation at the end."





1: War Machine readies himself for action...



2: ...taking stock of the situation.



3: He realizes he has just the thing.



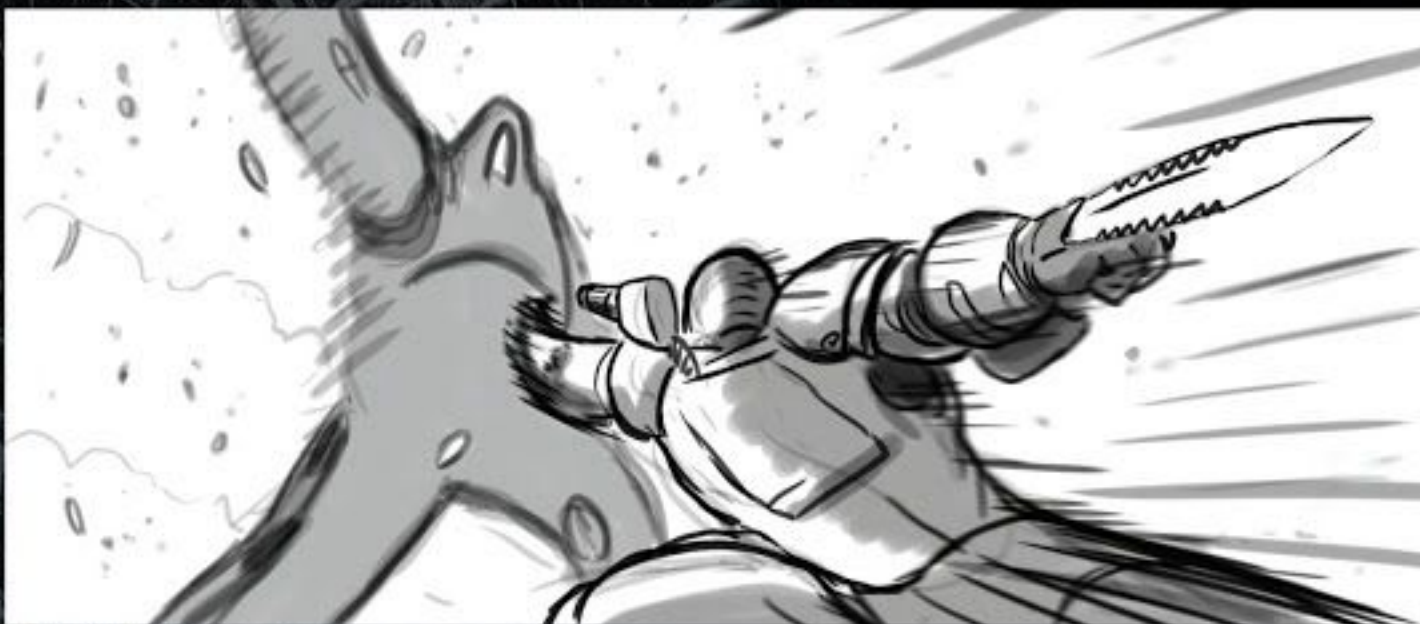
4: Like a samurai of feudal Japan...



5: ...War Machine slides his sword from its scabbard...



6: ...and steels himself against the advancing dreadnaughts.



1: War Machine lashes out once—



2: —and again, the Drone parrying his every move.



3: But it was just a feint on War Machine's part!



4: He plunges the blade forward—



5: —toward the robot—



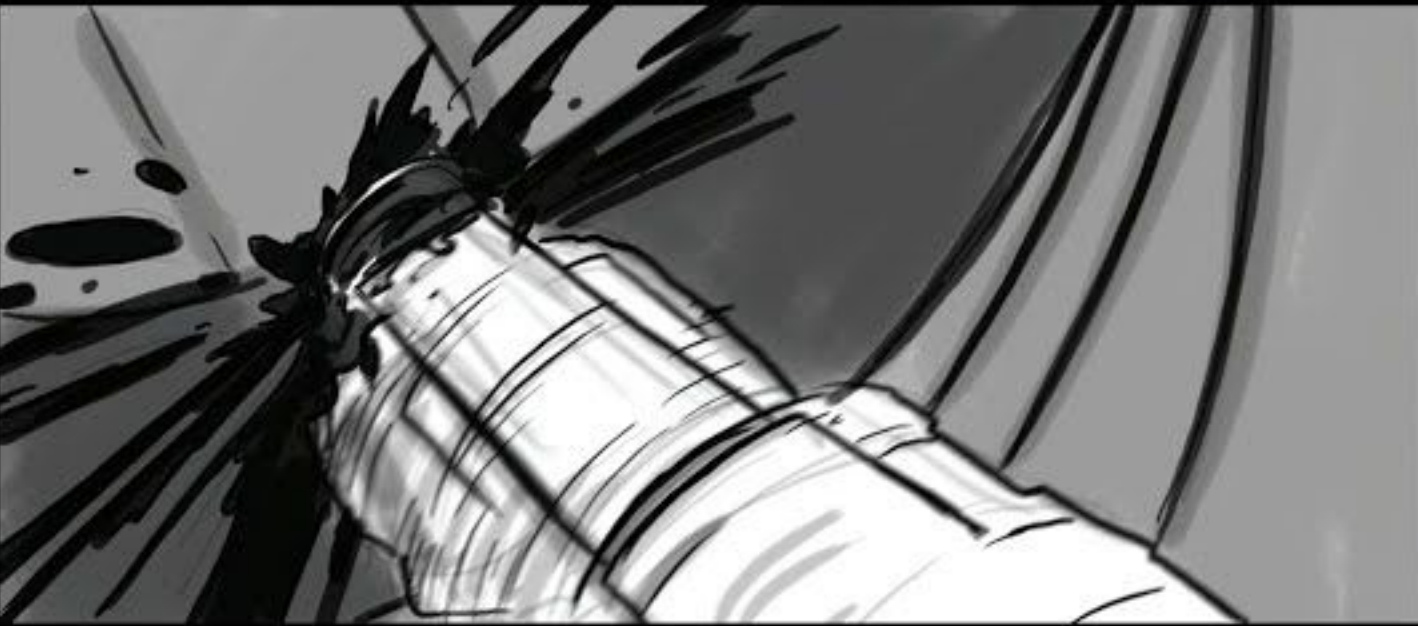
6: —and deep into it, oil spilling from the wound.



1: The oil spills like blood...



2: ...as Rhodey twists the knife—



3: —tearing through the metal like it was nothing.



4: The robot's wound is devastating...



5: ...and War Machine finishes off the Drone.

Favreau: "I said, 'Okay, they're Drones—now let's do whatever we want to them, and let's really just open up our imaginations,' and I let those guys off the leash. And the ideas just poured forth. They were tremendously, tremendously prolific and talented guys, and I'm so lucky and I learned a great deal by collaborating with them. The ideas flow and, as a creative guy myself, when I see the ideas come with that facility, I'm in awe of that. With Genndy, the ideas just come one after the other after the other. They come so often that it's not even at a premium. And it's just fun."





1: The new attacker thrusts at War Machine...



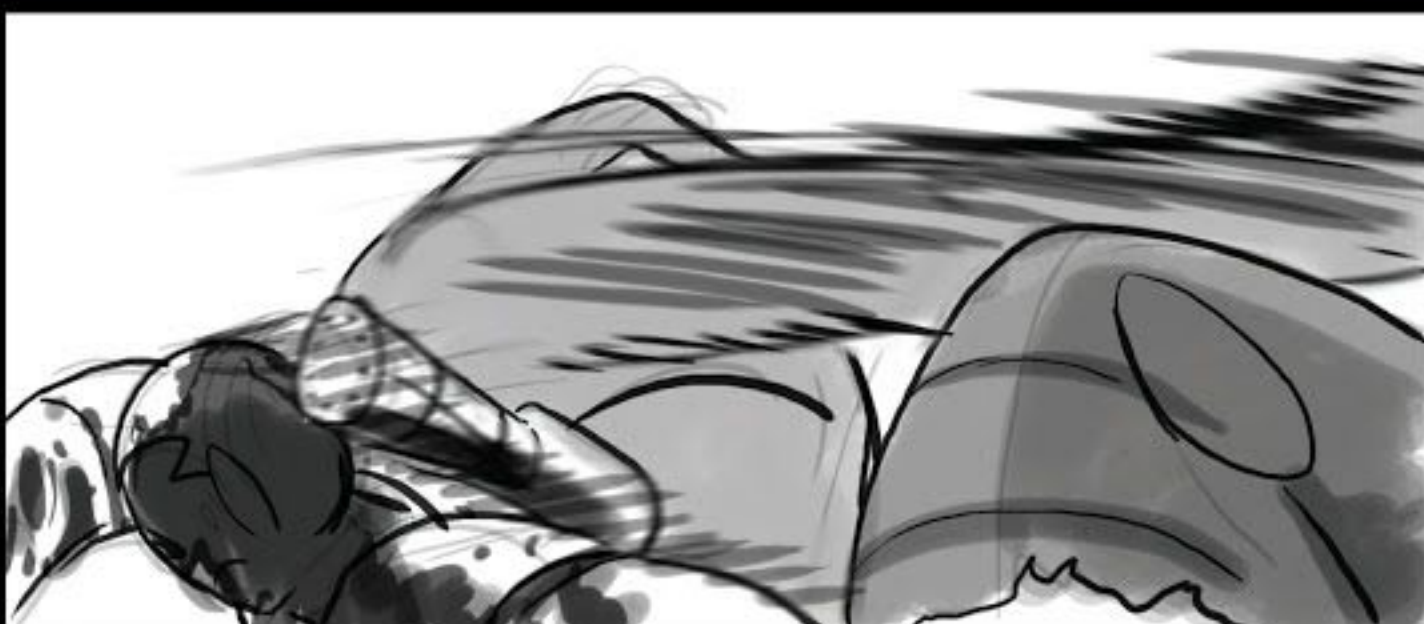
2: ...who grabs his reaching limb—



3: —and thrusts it into the machine's torso.



4: As the Drone falls, Rhodey senses something behind him...



5: ...and barely evades yet another attack.



6: War Machine readies his blade...



1: ...and tears upward—



2: —oil spurting like blood on a samurai battlefield...



3: ...finishing off the wretched automaton.



4: War Machine surveys the Japanese Garden...



5: ...ready for whatever comes next.

Favreau: "As you start to shoot the effects, you start to see that there are certain adjustments that have to be made. But the spark and the core and the inspired idea still very much comes from Genndy, and I tried to really nurture that and preserve that."

CHAPTER SIX:

BUILDING TOMORROW

As much as Iron Man 2 is about the man, we can't forget the iron—the technology that Tony Stark forges. Sometimes the technology is big and splashy, like the Iron Man armor. Sometimes it's more humble. But in a film like this, it all has to be created.

No piece of tech makes it onto the screen unconsidered. The artists visualize the tech, the director and producer and production designer review and ask for revisions—until the piece is finally ready for the world of Iron Man. Many of these elements need to be built, and that's where Prop Master Russell Bobbitt comes in.

"An interesting challenge that I always have as a prop guy," says Bobbitt, "is that I've never seen the same day twice—so every single day is a new challenge for me. If I make the coolest prop in the world, 14

people say, 'Well, can't you do this with it?' And I'm the guy that can't say no, so... And I like that. It's what lights me up and it's why I do what I do. It's constantly a new thing, a new challenge. If I want to see Iron Man 3, I better pull it off."

"You want it to look a little bit like it belongs in the real world. You start getting too sci-fi, you start losing the audience," says Production Designer Michael Riva. But there is a balance between the mundane and the futuristic that must be maintained. "I think we live in a world—in Tony Stark World—where everything should be prototypical of stuff that's coming in the next three or four years."

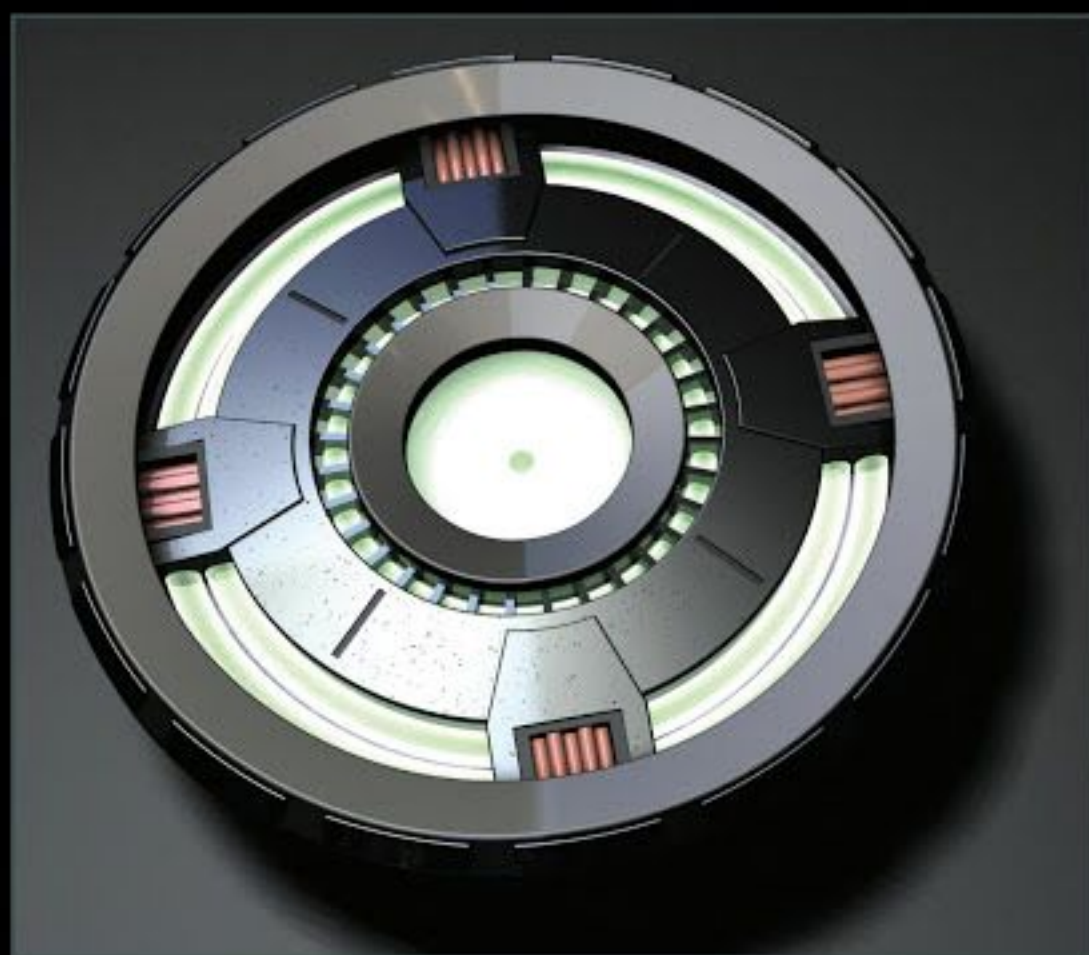
The following pages present a glimpse into the world that exists inside Tony Stark's imagination.

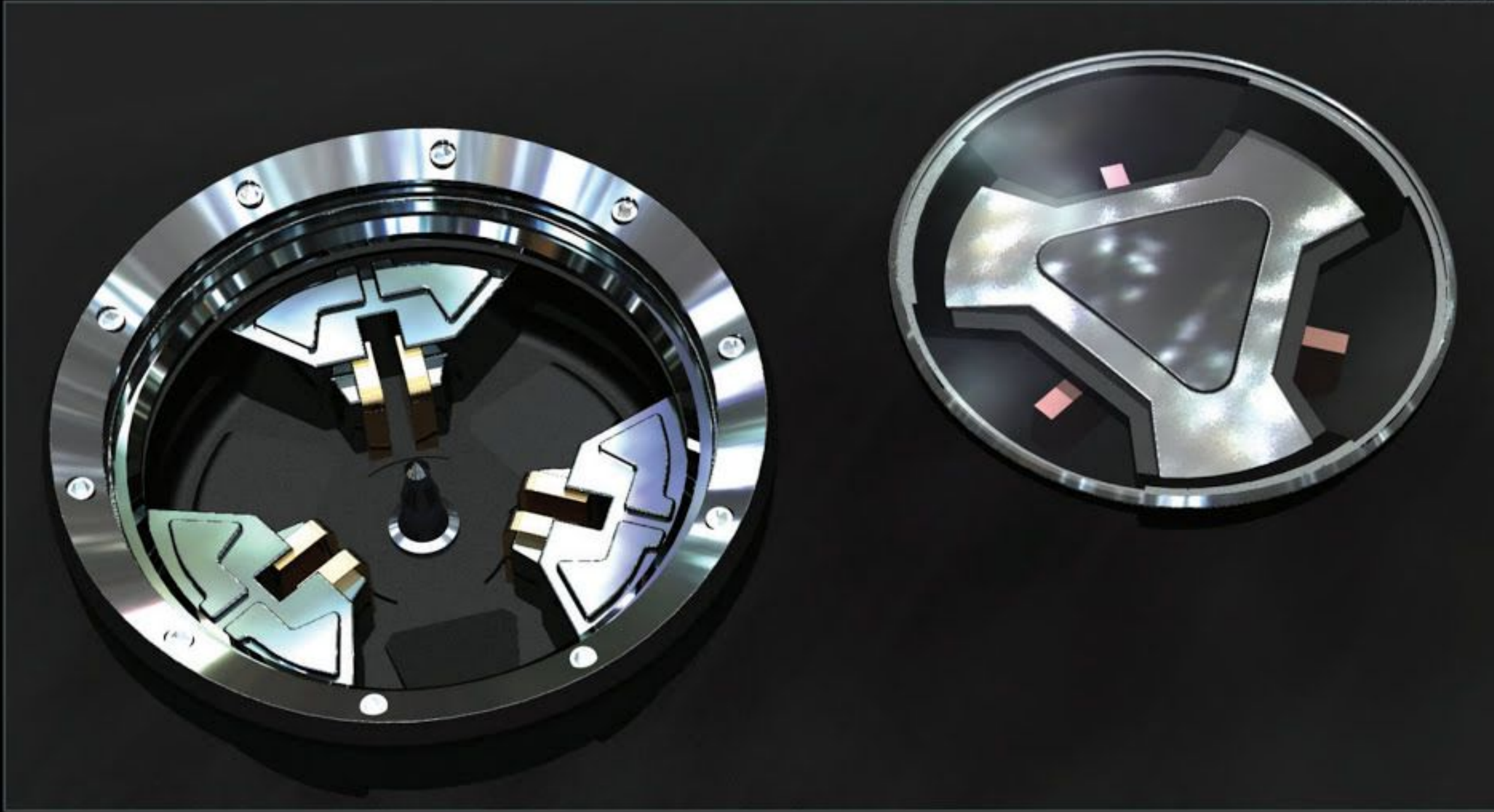




REPULSOR TECH

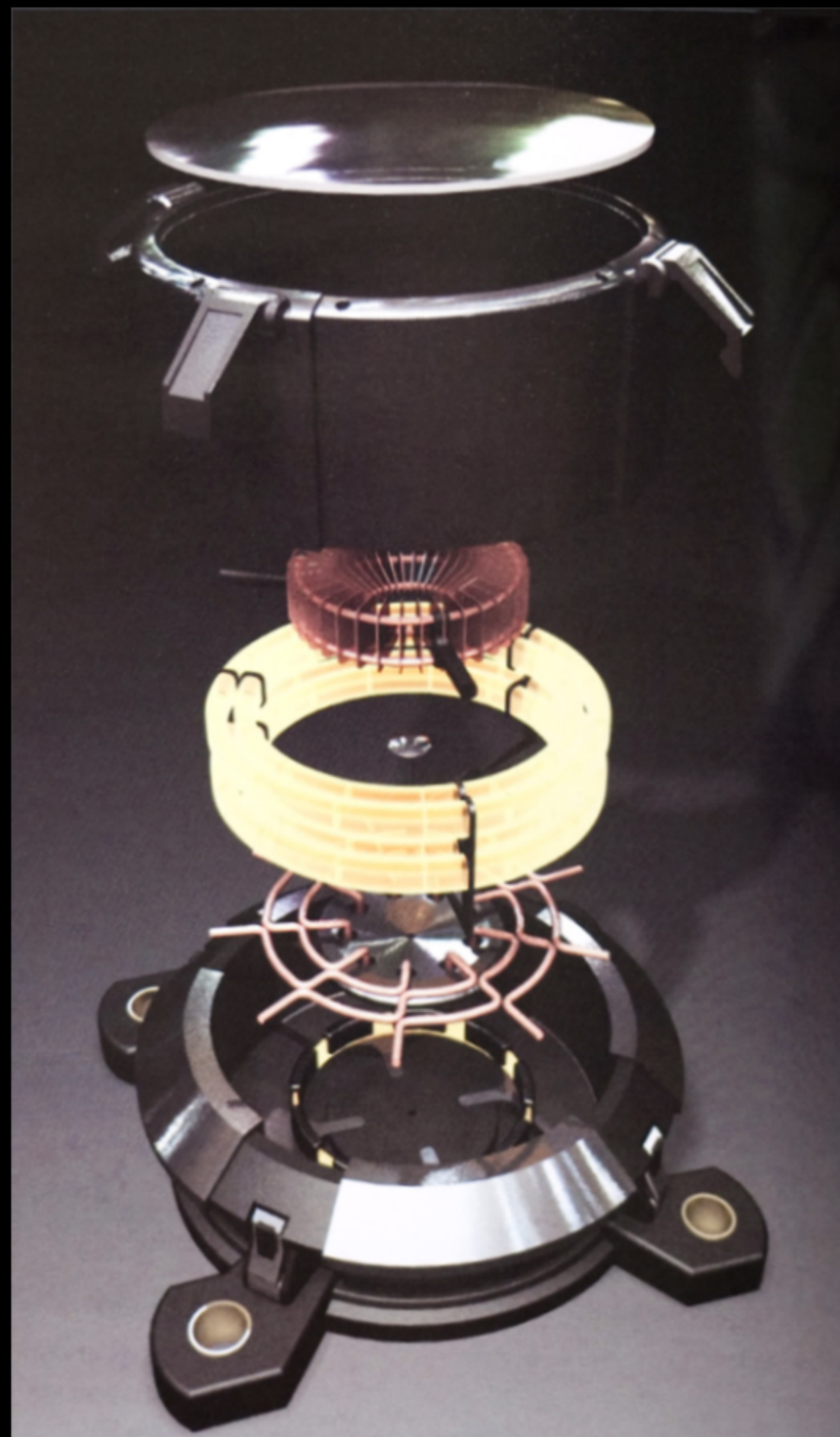
Russell Bobbitt – Prop Master: "We assumed that we're six months later down the line from the first Iron Man, so we redesigned the [RT] that he's wearing now. Robert felt like he wanted it to be a little smaller in diameter, and we grew it a little bit in depth, and changed the design a bit so that we got a little bit more light out of it and a little different glow in different areas."



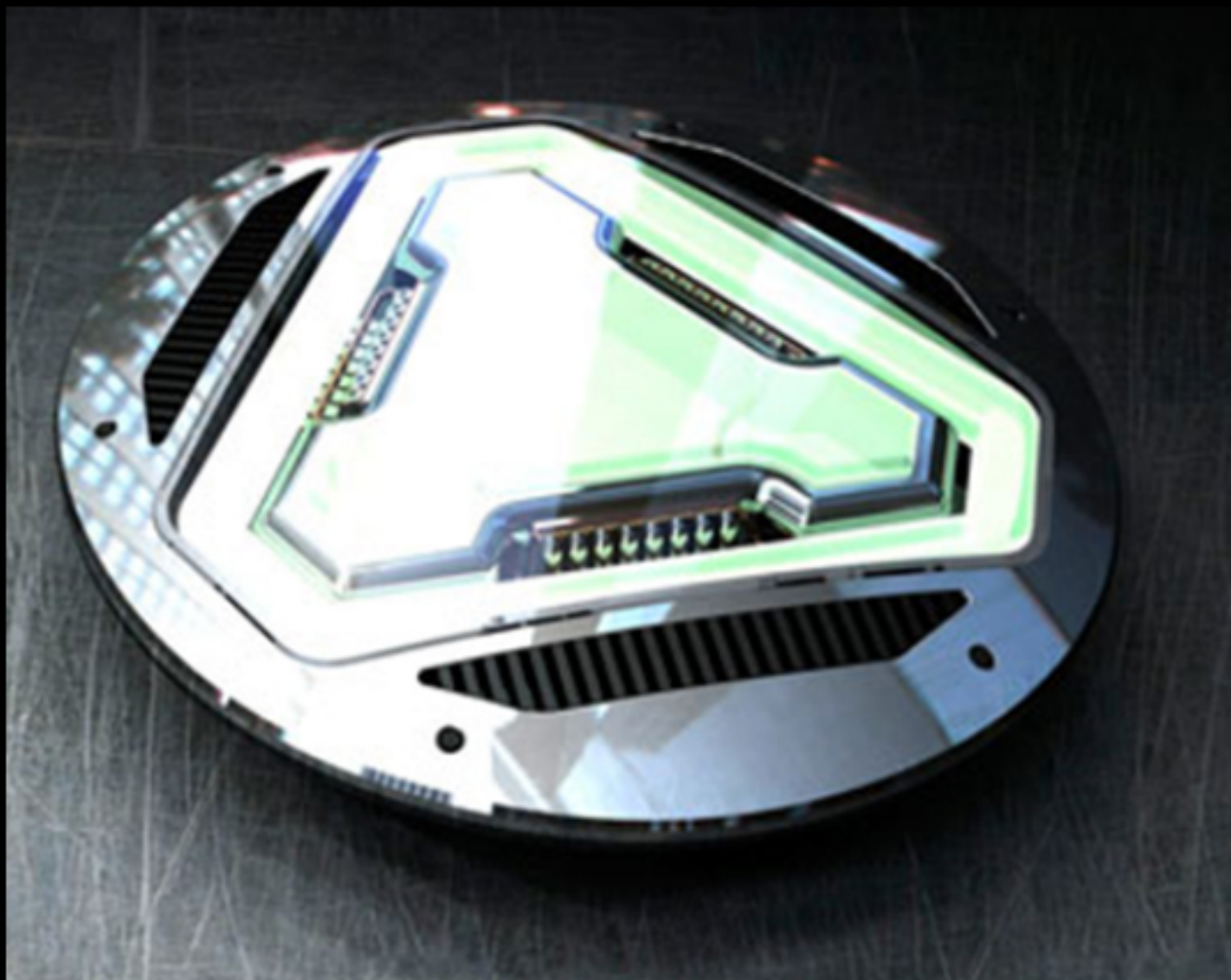
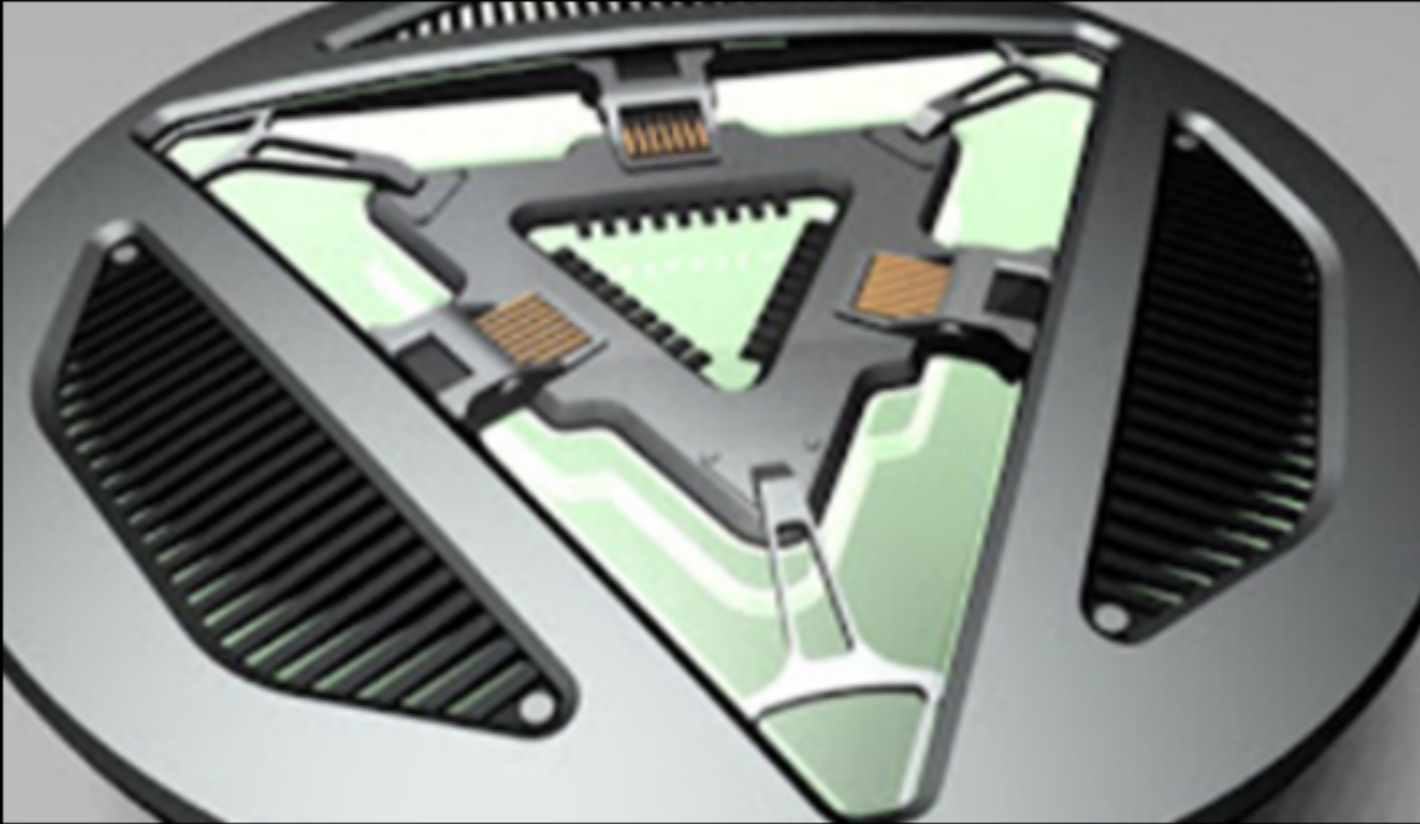


Bobbitt: "There is a light unit in the RT. There's probably about 75 micro-mini LEDs. On the first Iron Man, I was running in there and I'd put a little needle in the RT to turn it on and off. Technology two years later, they finally have servos that are small enough that I could fit in there, and I now have him on remote control. So I'm not up in his face in every emotional scene that he's got."





Favreau: "We're designing a new shape for the RT light. It's going to be a triangle, but we're trying to preserve some of the personality of the old silhouette—we want to keep it our own and of make it look like another hero. We wanted a progression to the triangle to have something different to show that there is a new advance in that tech. And so keeping it graphically simple is cool, plus it helps us build towards our Hall of Armor of many different designs which is part of the mythology of Iron Man:"



PRISMATIC ACCELERATOR

Stark's Prismatic Accelerator became an integral part of the technology Tony uses to repair himself as he builds the new RT.

STARK INDUSTRIES PROJECT-PEGASUS

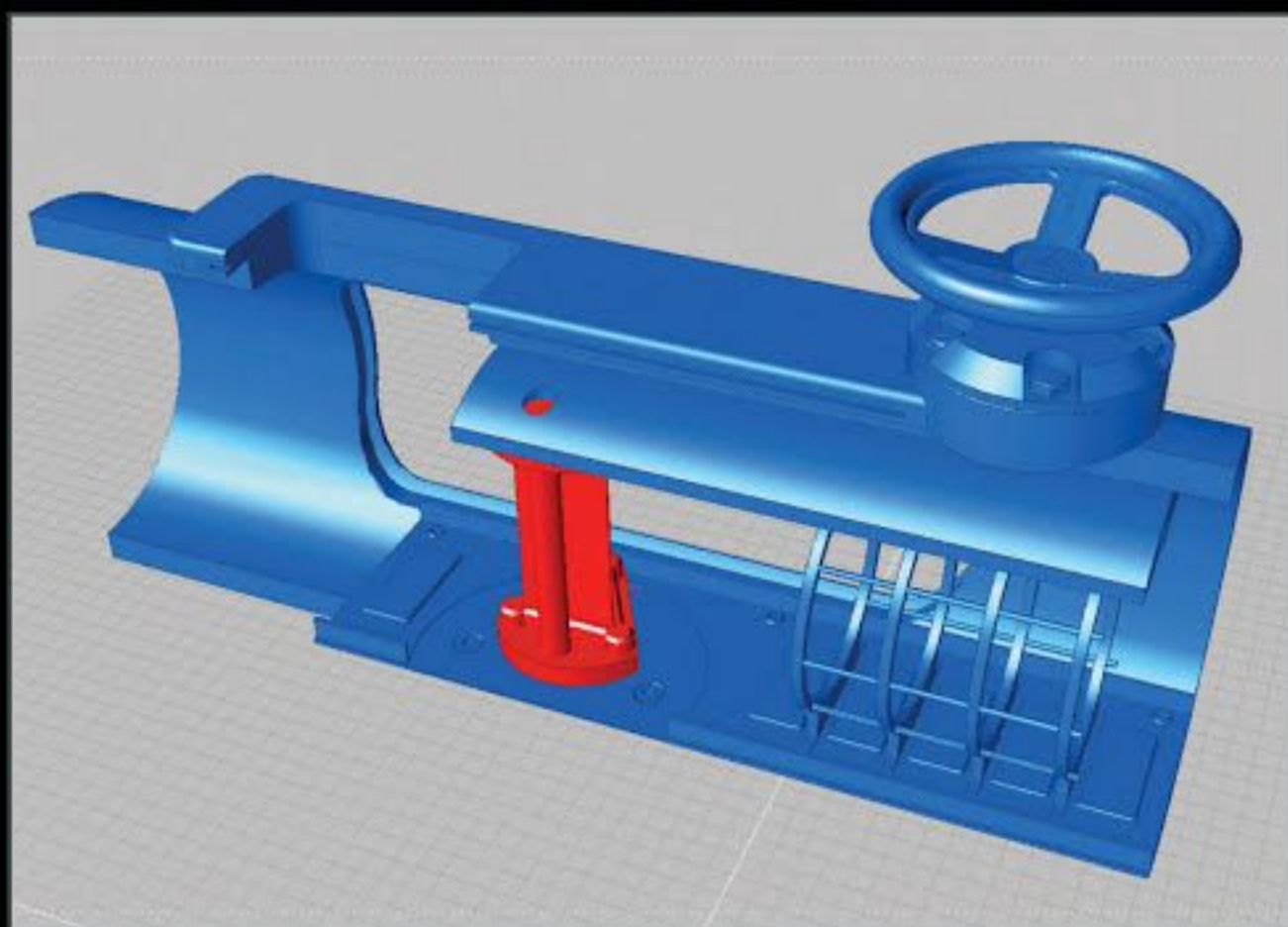
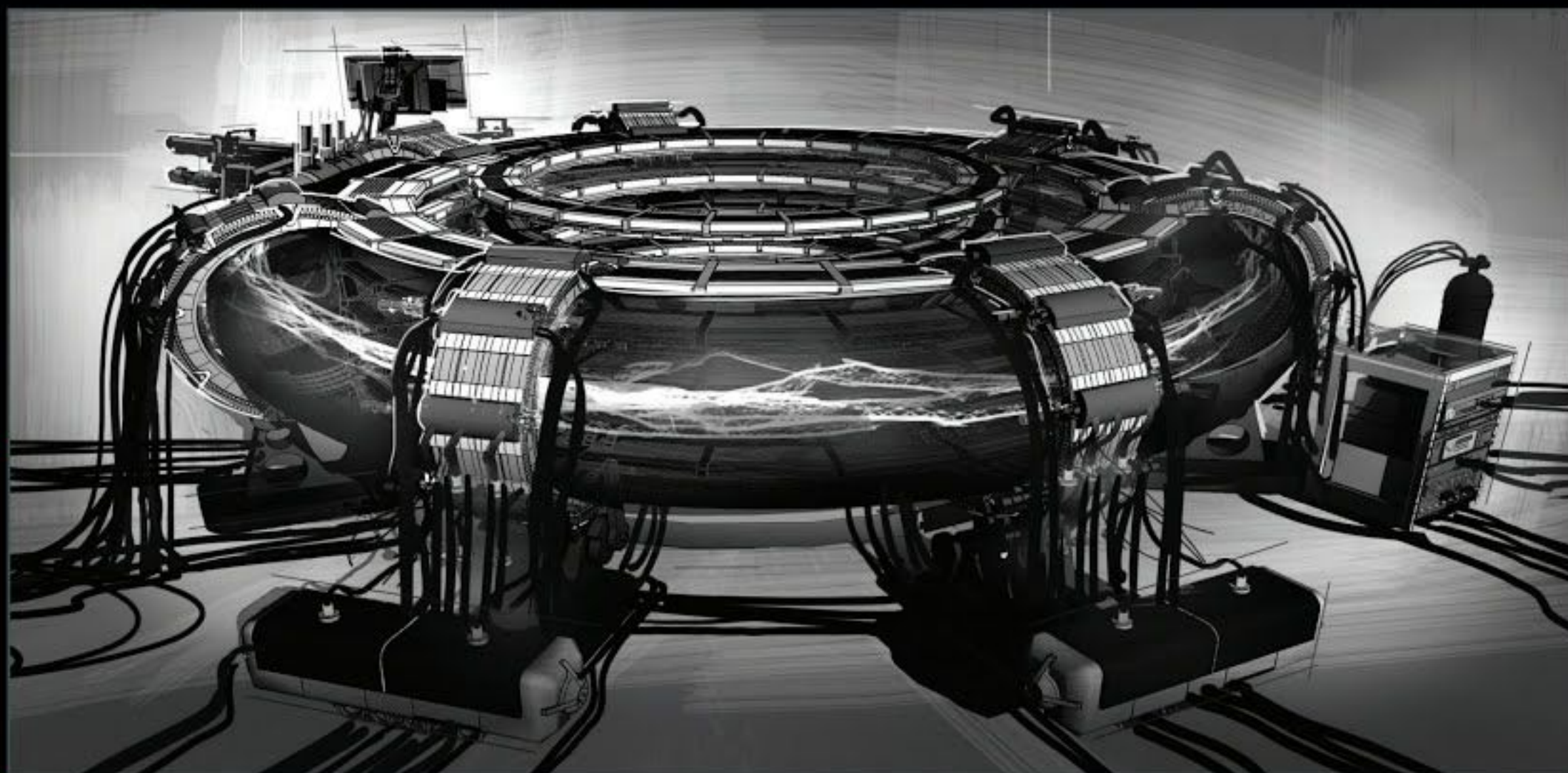


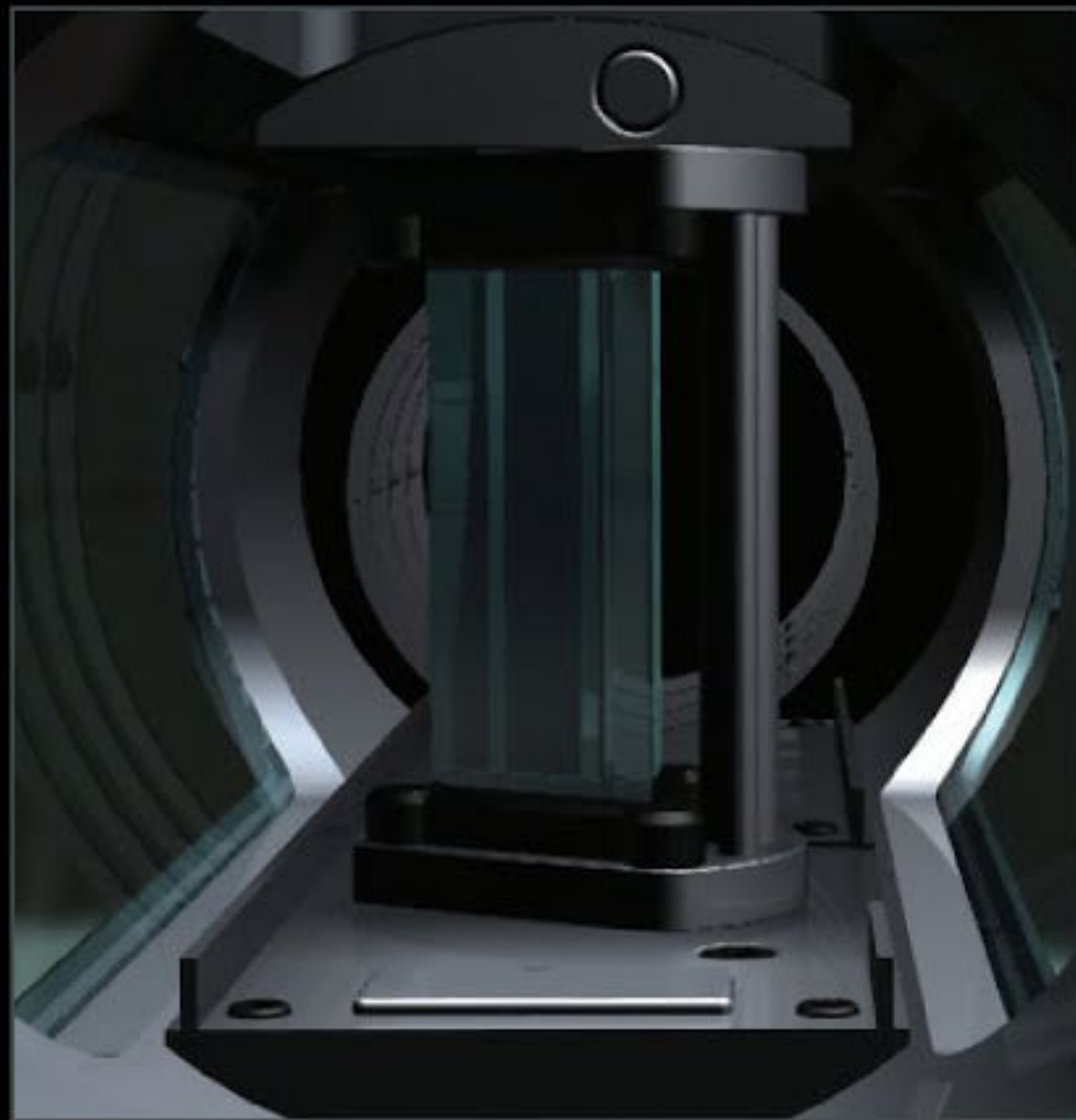
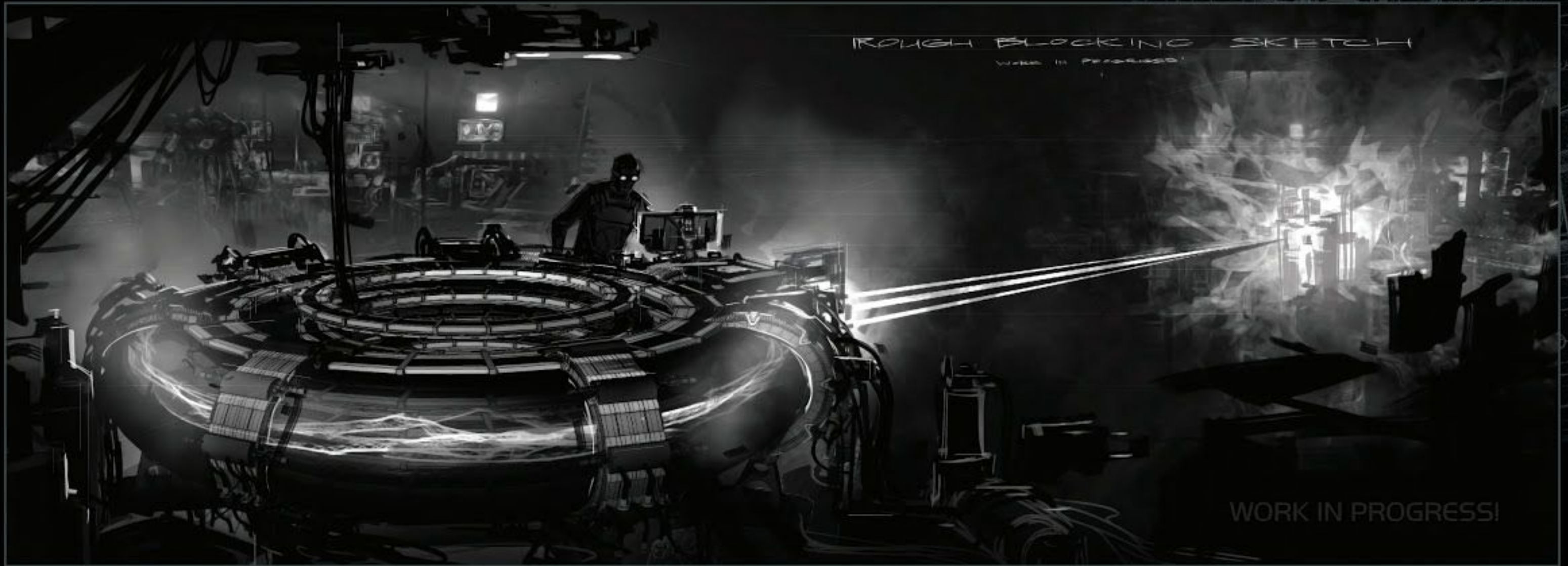
⚠ DANGER

Invisible Laser Radiation
AVOID EXPOSURE TO BEAM
Class 3A, 3B Laser Product

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Peak Power: 50mW	5mW
Wavelength: 830-870nm	640-660nm

Part Number: ISM-000-A3
CAGE Code: OB107





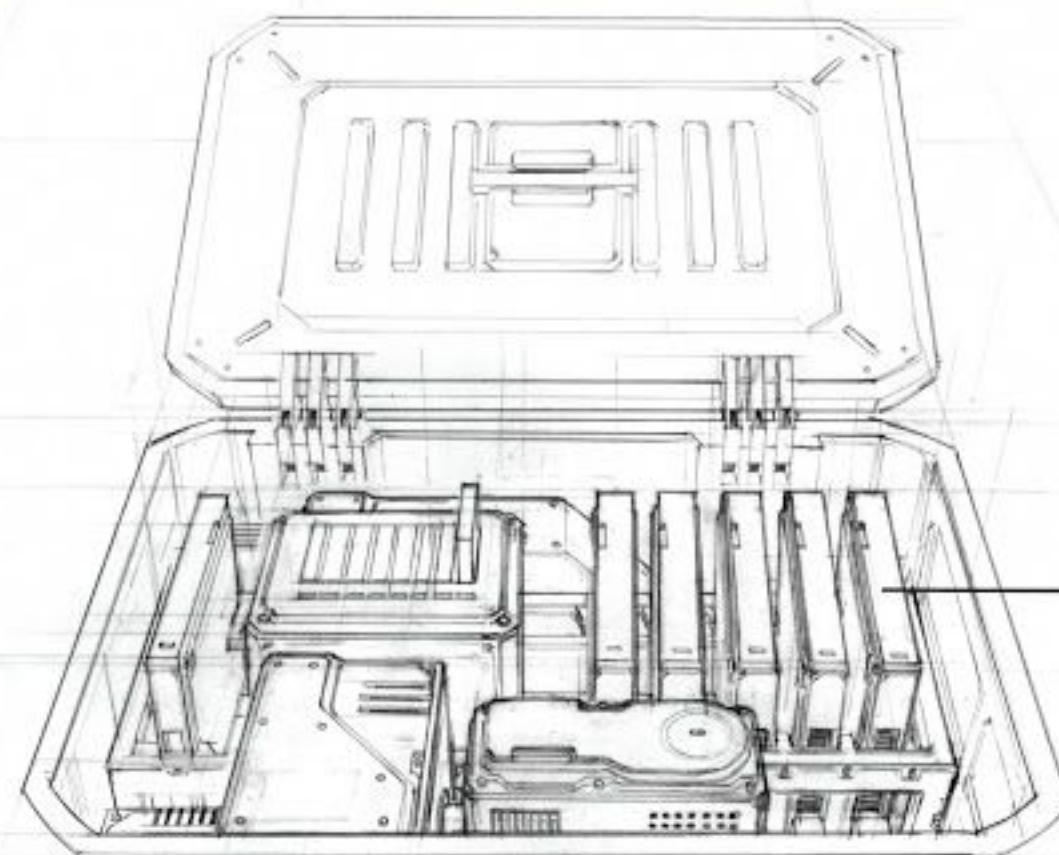
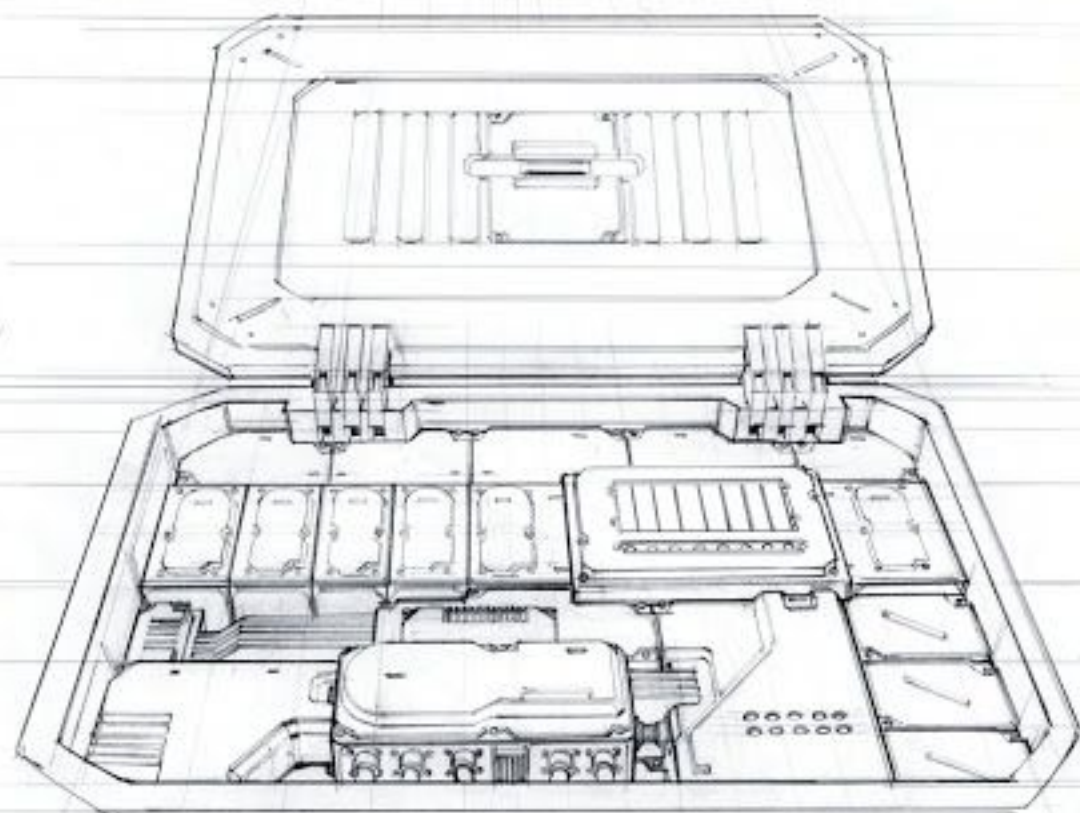
Feige: "The truth is, Tony Stark's superpower is not an ability to fly or shoot rays—his superpower is his intellect. He is an extremely intelligent man who relies on his mind to get him out of trouble."



Ryan Meinerding

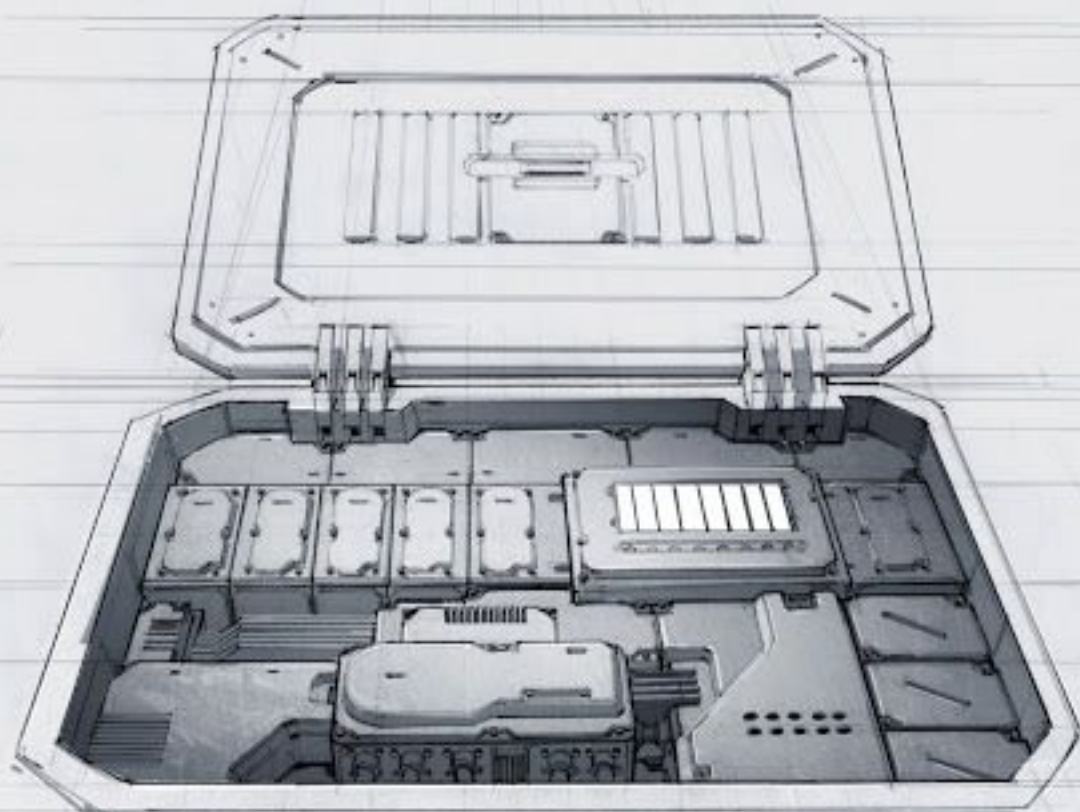


POWER TO ACCELERATOR

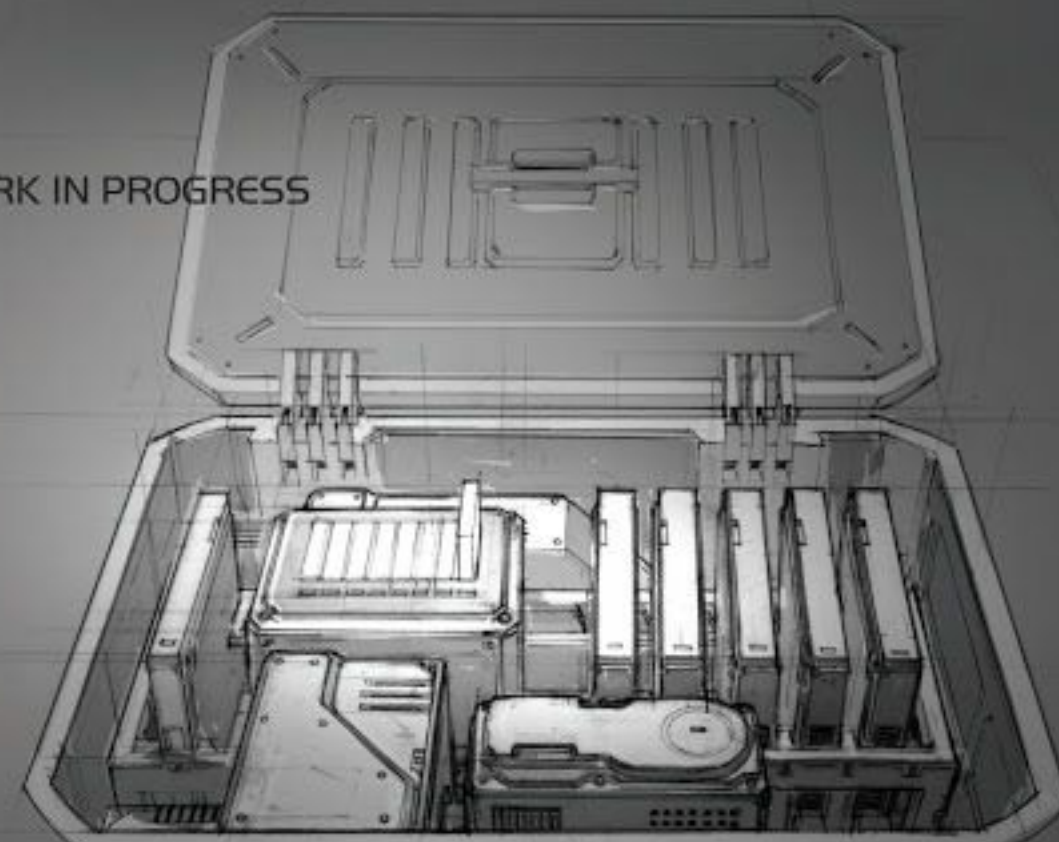


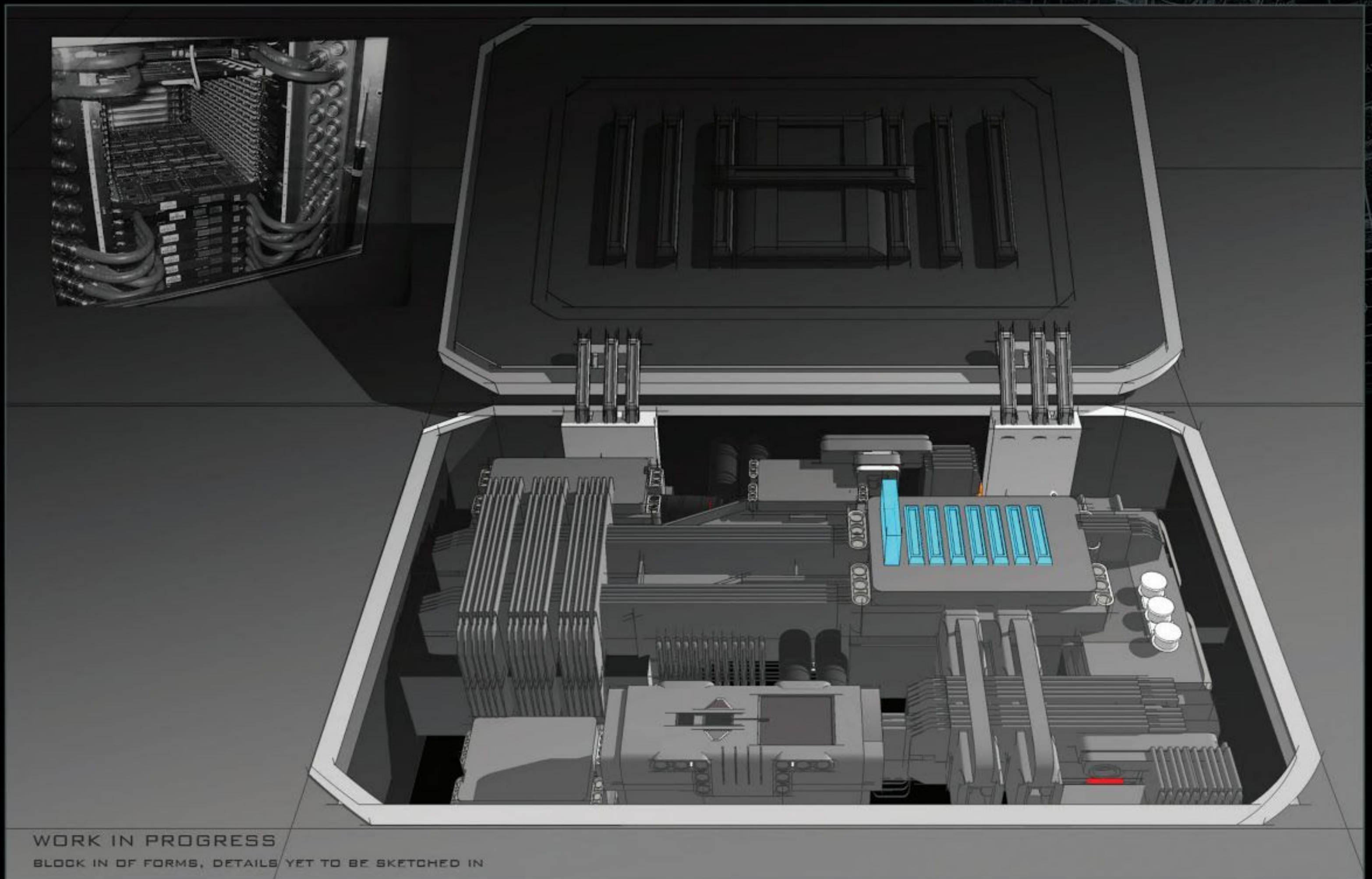
A ROW OF THESE...

WORK IN PROGRESS



WORK IN PROGRESS





Originally designed to be a portable version of JARVIS—Stark’s electronic “butler”—this device was repurposed during production into the control unit for the Prismatic Accelerator.

STARKTECH



"A" OFF MODE



"B" ACTIVATED



"C" IN OPERATION

OPERATION DIAGRAMS
OF STARKS TELECOMMUNICATION
AND MULTI MEDIA DEVICE

STARK INDUSTRIES



RASPUTIN PROP CONCEPTS

JOHN EAVES 3-09

Favreau: "With our film, we wanted that theme to be technology. We wanted to unify it and exaggerate technology and have fun with it."



VERSION "A"



VERSION "B"

ACTIVATED

PERCEPTION

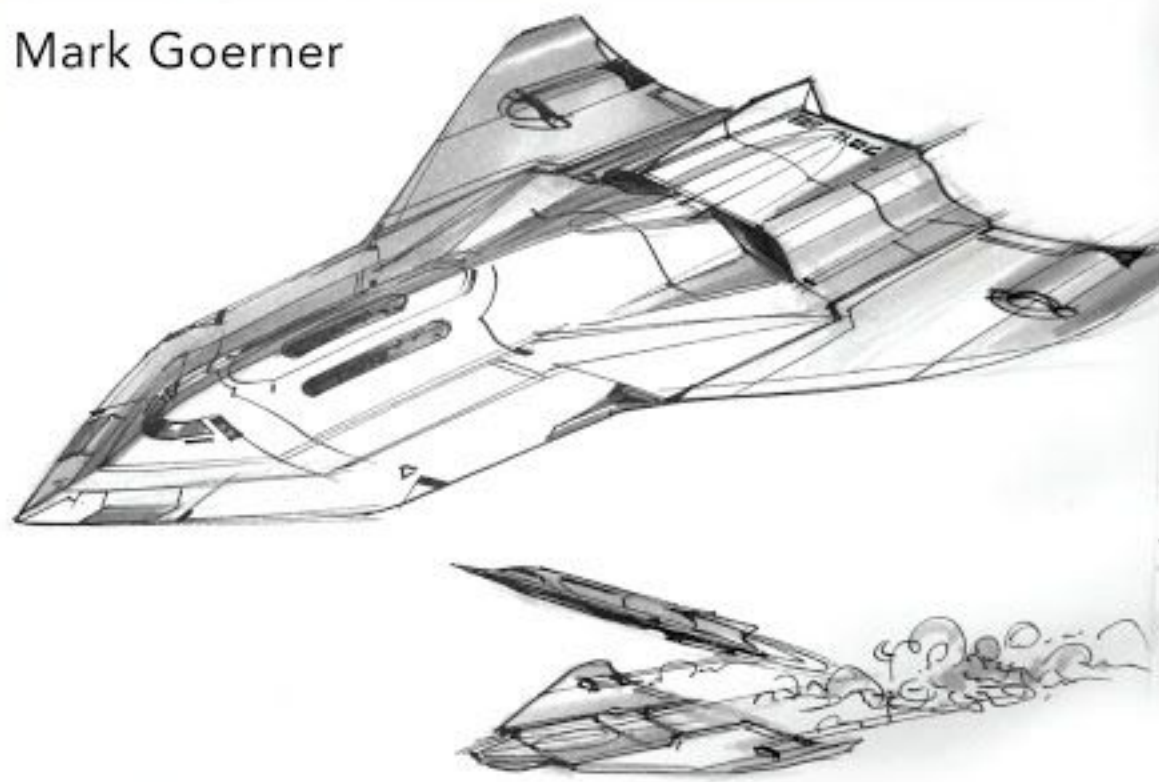


Feige: "The difficulty has been keeping ahead of what really is happening. It really is hard to have something that's both plausible, yet far off enough in the distance that it doesn't seem like it's too

familiar. You know, we've sort of set a bar for ourselves to say whatever happens in this movie needs to feel like it could happen in the real world."

STARK JET

Mark Goerner



Mark Goerner



Early designs of the Stark Jet had the craft designed to fly into space, but this became less important as production continued on Iron Man 2.

Riva: "The [Stark Jet] was originally a plane that was supposed to go up above 60,000 feet, where weightlessness happens—so that when Tony Stark leaves Washington at five o'clock in the evening, he gets to California by seven o'clock, by going close to space, in an arc."

STARK INDUSTRIES



Nathaniel West



Zophres: "We looked at tons of racing suits, but Robert had no interest in wearing what was off-the-rack. This was the millionaire aspect of Tony Stark informing that decision. He wanted to wear something that had been obviously custom-made and different, developed in the Stark lab. We got what we liked visually, and then we did a version for the driver where it's out of a different fabric, but it has the same pattern, and it turned out to be quite fireproof. Robert was going, 'I will never be anywhere near fire, I don't care if it's flammable.' And then three days into the shoot, guess what? We wanna set Robert on fire. The stuntman did a test, he was fine. It looks great and it's indestructible."



HEADS-UP DISPLAYS



Iron Man's in-armor heads-up display has been enhanced and streamlined since the last film, while the War Machine HUD is much more utilitarian and military.



Riva: "Opportunities now are incredible. You can do anything; there is no limit to the imagination now. The question still remains; does it need to do that? How will that help the story? Motivation is everything. If somebody's doing an incredibly elaborate shot, there better be a really good reason for it. There are moments you want to be special, and you want to be cool, and you want to be fun, and you can get away with murder."



CHAPTER SEVEN:

MARKETING

The expectations for any big-budget motion picture are high, but when the film in question is Iron Man 2—the sequel to a movie that not only over-performed against even the highest expectations, a movie that launched Marvel Studios into the realm of producing its own films, and a movie that redefined the modern super hero film—“high” doesn’t even begin to describe the expectations.

It falls to marketing to get the word out to the public; to prime the viewership for an experience that will thrill and amaze them. Modern-day film marketing comes in many forms: strategic partnerships, clever use of the Internet, dynamic trailers, exciting TV commercials—but perhaps no form of marketing for film is as iconic as the one-sheet movie poster.

Plastered across theater lobbies, billboards, bus stations, subway platforms, buses—the movie poster is a true art form in itself, with a history as rich and varied as the films being advertised.

Like any art form, the movie poster does not spring forth from nowhere. Instead, dedicated artists strike a delicate balance between art and commerce—between catching an eye and seducing a heart. The following pages show a sampling of some of the initial designs for Iron Man 2 posters...posters that might have been, images that are—in many ways—as phenomenal and enticing as the one-sheets that were used.





THE ART OF IRON MAN 2



A film like Iron Man 2—filled with visually intense characters and situations, in a way precious few movies are—presents poster designers with many options. Single-character images can be powerful and iconic, while designs highlighting multiple characters can benefit from the dynamism created by their interaction. In the end, no one course is the best for all occasions, and multiple posters are used to show the many facets of the film.



CONTRIBUTOR BIOS

Prior to his triumph directing *Iron Man*, **Jon Favreau** had established himself as one of the rising triple-threat talents in Hollywood. His earliest film roles, in *Rudy* and *PCU*, highlighted his witty and engaging acting persona. With the 1996 film *Swingers*—which featured an on-screen pairing with buddy Vince Vaughn—Favreau had his breakout moment as a screenwriter. After directing the mob comedy *Made*, Favreau had a huge hit at the helm of *Elf* starring Will Ferrell, marking him as a director to watch. After starring as Foggy Nelson in *Daredevil*, Favreau furthered his Marvel credentials by guiding *Iron Man* to franchise status as one of the year's biggest blockbusters. Before returning to the film version of the character with *Iron Man 2*, Favreau even tried his hand at penning the comic book *Iron Man: Viva Las Vegas*, illustrated by Adi Granov.

Marvel Studios President **Kevin Feige** has guided the studio through more than a decade of films and was instrumental in starting up the current era of films produced directly by the studio (rather than by a production partner). Feige serves as producer for all of the studio's slate of films—including *Iron Man* and *The Incredible Hulk*, as well as the upcoming *Thor*, *The First Avenger: Captain America*, and *The Avengers*, all of which are currently scheduled to be released by 2012. In that role, it falls to him to coordinate the emergent Marvel Cinematic Universe between the different productions—drawing together a talented pool of directors, producers, actors, and artists to create a coherent film world, the likes of which Hollywood has never attempted.

Louis D'Esposito wasn't a comic book fan when he joined the production of *Iron Man*, and while he certainly came to appreciate the characters and concepts, he's never lost sight that the goal of Marvel is to make a good film—not just a good super hero film. After becoming co-president of Marvel Studios in 2009, D'Esposito began overseeing the entire slate of Marvel movies, including *Thor*, *The First Avenger: Captain America*, and *The Avengers*. An industry veteran, D'Esposito has served as executive producer on such films as *The Pursuit of Happyness*, *Zathura* (on which he worked with Director Jon Favreau), and *S.W.A.T.* prior to joining Marvel Studios.

As Marvel Studio's Senior Vice President, Development and Production, **Jeremy Latcham** served as associate producer on *Iron Man* and co-producer on *Iron Man 2*. With the completion of *Iron Man 2*, Latcham begins pre-production on the eagerly awaited Marvel Studios film *The Avengers*, which will bring together many of the Marvel Cinematic Universe's biggest and most popular characters.

Victoria Alonso served as visual effects producer on films such as *Darkness Falls*, *Big Fish*, *50 First Dates*, and *Kingdom of Heaven* before joining with Marvel Studios on *Iron Man*. With *Iron Man 2*, she became co-producer in charge of visual effects for all of Marvel Studios, coordinating the many VFX houses that contribute to the overall look of the film. With the effects-heavy film slate that Marvel Studios has become known for, that's no small task. Alonso is currently working on Marvel Studios' next film, *Thor*.

Mary Zophres has been a longtime—and consistent—collaborator with the Cohen Brothers, serving as costume designer on film classics such as *Fargo*, *The Big Lebowski*, *No Country for Old Men*, and last year's *A Serious Man*, in addition to movies as far-ranging as *Dumb & Dumber*, *Any Given Sunday*, *Ghost World*, and *Catch Me If You Can* (for which she was nominated for a BAFTA Film Award). In 2009, she won the Saturn Award for Best Costume for her work on *Indiana Jones and the Kingdom of the Crystal Skull*. Currently, Zophres is working on the Cohen's remake of *True Grit*.

Michael Riva came to *Iron Man* as one of Hollywood's top production designers. In 1985, he was nominated for the Academy Award for Best Art Direction-Set Decoration for Steven Spielberg's *The Color Purple*; since then, he has logged credits on dozens of high-profile films like *Scrooged*, *Lethal Weapon*, *A Few Good Men*, *Charlie's Angels*, *Spider-Man 3*, and *Zathura*, on which he first worked with *Iron Man* Director Jon Favreau. Riva won an Emmy Award in 2007 for Outstanding Art Direction for a Variety, Music or Nonfiction Programming for his work on *The 79th Annual Academy Awards*, and he was part of the *Iron Man* crew nominated for the 2009 Art Directors Guild Excellence in Production Design Award for Fantasy Films.





Shane Mahan worked at Stan Winston Studio from 1983 until the founding of Legacy Effects, following Stan Winston's death in 2008. Mahan has taken on a lead role on dozens of films as physical effects supervisor. He has managed creature effects for science fiction movies like *Predator*, *Predator 2*, *Aliens*, and *Leviathan*; headed up the art department for *Terminator 2: Judgment Day*; and supervised animatronics for *Zathura* and *Eight Below*. As physical suit supervisor on *Iron Man*, he shepherded the development of the Iron Man armor from concept to fully functioning suit. His efforts garnered him an Academy Award nomination for Best Achievement in Visual Effects (joined by John Nelson, Ben Snow, and Daniel Sudick) in 2009. Mahan contributed to *Indiana Jones and the Kingdom of the Crystal Skull* and *G.I. Joe: The Rise of Cobra* before returning for *Iron Man 2*.

Ryan Meinerding has only been a freelance concept artist and illustrator in the film business since 2005, but his work is already drawing the kind of raves reserved for veterans of the industry. After collecting a degree in industrial design from Notre Dame, he eventually transitioned to Hollywood and worked on *Outlander*. Subsequent to *Iron Man*, he worked on *Transformers: Revenge of the Fallen* and helped coordinate wardrobe for *Watchmen*. While working on *Iron Man 2*, Meinerding contributed the design for the new Iron Man armor in the comic book series *Invincible Iron Man*, continuing to cement the strong bonds between Marvel Studios and Marvel Comics. He was part of the *Iron Man* crew nominated for the 2009 Art Directors Guild Excellence in Production Design Award for Fantasy Films.

Hailing from Bosnia, artist **Adi Granov** has established himself as one of the most exciting stylists of 21st-century comic book art. First making his mark with American comic book fans on *Necrowar* for Dreamwave Productions, he quickly moved up to Marvel, where he asserted himself as one of the House of Ideas' top cover artists on *She-Hulk*, *Inhumans*, *Thor: Son of Asgard*, and *Silver Surfer*. But it was his work on a series of memorable *Iron Man* covers that drew the attention of the book's editors; when the title was relaunched by writer Warren Ellis, Granov was invited on board to be regular artist. The resultant work, "Extremis," has been hailed as a masterpiece of Iron Man art. That caught the attention of the makers of the blockbuster *Iron Man* film, who early on used Granov's illustrations as the visual template for their hero's look. Since then, Granov has returned to comics and provided artwork for Marvel's *Iron Man*, *Spider-Man*, and *X-Men* franchises.

Animation superstar **Genndy Tartakovsky** first attracted the attention of fans with his work on the Cartoon Network series *Dexter's Laboratory* and *The Powerpuff Girls*. Both series became massive hits with kids as well as adults, with their innovative mix of animation styles. The series *Samurai Jack* proved beyond any doubt that Tartakovsky's eye for storytelling could translate into a more action-based environment and earned him an Emmy in the process. His work on the *Star Wars: Clone Wars* shorts garnered him two more Emmys—and, in many viewers' minds, cemented the link between his unique vision and the world of science fiction cinema. Among other animation projects, Tartakovsky is currently at work on a *Luke Cage* comic book for Marvel Comics.

Tony Bohorquez is the lead modelmaker on *Iron Man 2*, a role he earned from his model-making work on the first *Iron Man* film. Bohorquez's impressive résumé also includes a host of genre films such as *The Island*, *Beowulf*, *Indiana Jones and the Kingdom of the Crystal Skull*, *Star Trek*, *Terminator: Salvation*, and the upcoming *The Adventures of Tintin: The Secret of the Unicorn* from Director Steven Spielberg and Producer Peter Jackson. He'll be rejoining Marvel Studios as concept modelmaker on *Thor*. Bohorquez was part of the *Iron Man* crew nominated for the 2009 Art Directors Guild Excellence in Production Design Award for Fantasy Films, when he was also nominated in the same category for his work on the fourth *Indiana Jones* movie.

Property Master **Russell Bobbitt**'s résumé includes such diverse films as *Star Trek*, *Starsky & Hutch*, *What About Bob?*, *The Sum of All Fears*, *Never Been Kissed*, and *The Hangover*. Tasked with the acquisition and maintenance of film props and set pieces, as well as the establishment of prop continuity from scene to scene, Bobbitt has been developing the physical reality of movies for nearly 30 years. In 2008, Bobbitt was presented the prestigious Behind the Scenes Award for Best Property Master by Director Jon Favreau. He lives in Los Angeles with his wife, Tracy, daughter, Jordan, and son, Travis, and is currently working on Marvel Studios' 2011 release, *Thor*.

Lauri Gaffin has worked as set director on a wide range of films—from *Fargo* to *Lethal Weapon 4* and from *Tuesdays with Morrie* to *Land of the Lost*. She first teamed with *Iron Man* Director Jon Favreau on 2005's *Zathura: A Space Adventure* and subsequently leant her eye for detail and commitment to accuracy to both *Iron Man* films. Between the two movies, she worked on the Will Ferrell vehicle *Land of the Lost*.



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MARY ZOPHRES

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"IRON MAN 2" GWYNETH PALTROW DON CHEADLE SCARLETT JOHANSSON SAM ROCKWELL MICKEY ROURKE AND SAMUEL L. JACKSON AS NICK FURY MUSIC BY JOHN DEBNEY MUSIC SUPERVISOR DAVE JORDAN
VISUAL EFFECTS AND ANIMATION BY INDUSTRIAL LIGHT & MAGIC COSTUME DESIGNER MARY ZOPHRES CO-PRODUCERS JEREMY LATCHAM VICTORIA ALONSO EDITORS RICHARD PEARSON, A.C.E. DAN LEBENTAL, A.C.E. PRODUCTION DESIGNER J. MICHAEL RIVA DIRECTOR OF PHOTOGRAPHY MATTHEW LIBATIQUE, ASC
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